

RECORD

111

Certification and Merit Note Book

No. 40

(त्रिवेदी वाम -- ५२१८.६.३०)

(मेष्ट्रे --- सूर्य)

प्राप्ति
१-११ गोपनीय-संग्रह
३५-५३ गोपनीय-संग्रह

१८-१५ गोपनीय-संग्रह
१८-१५ गोपनीय-संग्रह

२४-४५ गोपनीय-संग्रह
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१८-४५ गोपनीय-संग्रह
३८-०८ गोपनीय-संग्रह
३८-०८ गोपनीय-संग्रह

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१८-५८ गोपनीय-संग्रह
१८-५८ गोपनीय-संग्रह

F. R. Fosberg

Collection and Field Note Book

No. 40

(Aug. 8, 1954 -- May 24, 1955)

(35993 --- 36376)

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1954 France

n. 1

Aug. 8 - Annemasse to Chamonix

Rough dissected country
with thickets, mostly
Robinia, along the Arve.

Then more flat terraces
with grain fields, the
escarpments, and ravines
with thickets. Some
hedgerows. Orchards and
scattered fruit trees.

Reignier. 509 m.

Misc. cult. orchards, patches
of woods, & mixed conifers
and broad-leaf. Rows of
willows. Terraces become
more dissected.

Grain being harvested.

La Roche-sur-Foron -

Picea in ravines. Viscum
on apple trees. Quercus
in thickets and patches
of woods. Then patches
of Picea wood with
broad-leaf under-story.

Mountains on both
sides with white cliffs,
woods on slopes except
near summits, where there
is meadow. Flat valley
bottom completely cultivated.

Woods on mountain sides
largely spruce. Broad leaf
scrub on rocky bluffs and
ledges. Grain and alfalfa
in valley floor. Low willow

1954 France in.

thickets or copse along the arve at Bonneville.

Phragmites communis in low spots along in.

cultivation and meadows on lower slopes where these are not too steep, otherwise wooded.

Some mixed mostly broadleaf wood on valley floor.

Some orchards and scattered fruit trees. Some loose talus at bases of cliffs near Marignier. Great cliffs near mountain tops.

Closes.

Valley narrow, mostly cult. but thickets of oaks, willows and *Populus tremula*. Then valley is mostly wooded. Cliffs very sheer on both sides. Debris cones at bases wooded.

River milky. Some debris cones loose, being colonized by shrubs & trees. Some *Pinus sylvestris*, mostly spruce. Most lower slopes on west side, mostly in meadow. Patches of reeds and meadows, a few grain patches in valley floor away from river.

Considerable *Betula* var. *Osc.*

and willow, alder thickets near river. Valley much broader here. Large reed patches.

Sallanches - Combloux - ~~Mont~~

High snowy peaks and glaciers visible from here. Broken patches of meadow and wood, largely birch and poplar.

Then wide flat open meadow with scattered trees. Grazed rather closely. High rocky peaks, almost bare on east.

~~St. Gervais~~ ~~Fayet~~ St. Gervais. 680 m.

Some of mts. immediately surrounding St. G. are wooded to tops, others

partially so, with upper parts in meadows, with rocks and cliffs bare.

Farther away are snow-covered peaks and slopes. Flat meadows in valley floor. Lower slopes of mountains with meadows and houses, trees and thickets.

Chedde

Valley narrow, floor is filled with thickets of *Populus tremula*, *Salix*, *acer pseudoplatanus*, *alnus*, *Betula*, etc. Cliffs have sparse scrub. Mixed scrubby forest on

slopes, largely spruce and alnus, *Corylus*, ferns, *Hedera* (rare), *Betula*, *Auruncus*, *Lambucus*, *racemosa* (full fruit, bright red), very common *Clintonia*, *Rubus idaeus*, *Salix*, etc. Then mixed beech and spruce forest with much birch. On gentler slopes an occasional meadow.

Then a rather wide circular valley at lower surrounded by steep slopes and cliffs. Slopes wooded with spruce and beech, some loess talus, ~~some~~ meadows on slopes flat bottom with wood, meadow, gardens, houses, fruit trees, patches of *Phragmites*.

Valley above has mostly spruce forest with birch and some beech, alder thickets, even a little *Quercus*, and *Arsenius*.

Upwards more and more *Larix*, but spruce still dominant.

Vaudagne. Calluna on rocky places.

Slopes very steep and rocky, forest sparse, much *Betula*.

Another wide place with

meadows and patches of birch forest, some spruce, some alder scrub on slopes. Birch and alder on avalanche scars and debris. Les Houches. 980 m.

This widens out into Chamonix V. at the foot of the steep slopes of Mont Blanc Massif.

Little wood on these except on faces of truncated spurs. Glaciers immediately above in valleys between spurs. Sharp jagged peaks at tops of spurs. Meadows and birch-alder forests in valley.

Wood on faces of spurs spruce and (?) larch.

Willow thickets along river, also much alnus. Some patches of *Pinus sylvestris* in valley. scattered spruce. *Sorbus aucuparia*.

On other side of valley shrubs and a few spruce-larch forests when slopes not too steep. Les Bossons.

Below glaciers are completely bare areas, evidently showing amount of recent melting.

1954 France

Aiguille du Midi
alder thickets lining
river. Water very milky.

Avalanche scars very
numerous and conspicuous
in spruce forests on both
sides of valley. Older
ones being revegetated by
alder(?), never by grass only.
Birch forest on debris cones
at base of older ones.

Spruce forest mixed with
considerable birch on
Mont Blanc side, not on
other, at Chamonix.

Cogwheel railway up side
of mountain from
Chamonix to Mer de
glace. Mainly through
spruce forest which
gradually changes to
larch toward the top.

Around the glacier
are steep bare slopes,
then slopes covered by
great boulders with
Oxyria, *Rumex* etc.

Above this a low scrub
of *Rhododendron ferrugineum*,
Vaccinium myrtillus, *V. uliginosum*,
Empetrum nigrum, *Calluna*, with
scattered larch saplings.

Many herbs. stature 10-25(?)
cm. mat-like; peat soil.

The glacier is a
narrow valley glacier
which has melted
down considerably, leaving
large amounts of debris
on top ranging from
sand to boulders
1x2x3 m. The surface
is in most parts so
covered that more
rock than ice shows.
The fragments are
practically all
angular, or only
very slightly worn
on the angles. Mostly
pegmatite and gneiss
or slist. Stray fragments
of other rocks.

Above Chamonix on the
side the lower slopes
are covered by spruce
forest, with trees 25 m.
tall and 3-5 dm. thick,
forming an irregular
almost complete cover.

The ground is very
rocky, covered by duff,
and humus with a
thin herbaceous layer
of quite a few species,
much bare ground, esp.
in more rocky places.

* H H H H H H H H

Rickett

ab

1100 - 1150

les Plans

Martiney 1913

Passerelle au glacier 1830

8 1954 France

Aug. 8 - Chamonix
Picea abies forest on
 slopes at foot of mountain

35993 *Pyrula secunda*
³ abundant locally

2 94 *Galium*
 occasional

1 95 *Maianthemum bifolium*
 occasional

1 96 *Paronychia*
 local in bare area

1 97
 occasional
 Amontenvers

Aug. 8 Mer de 'Glace,
 Mont Blanc Massif.

8 steep slopes of canyon,
 above glacier

2 98
 occasional along small paths

2 99 *Cepis*?
 common in low heath

36000 *Potentilla*
² rare in low heath

2 01 *Melampyrum*
 common locally in low heath

2 02 *Phyteuma*
 occasional in low heath

2 03 *Campanula*
 common in low heath

2 04 *Rhododendron ferrugineum*
 abundant in low heath

1 05 *Melampyrum*
 common in low heath

Haut Savoie
 1100 - 1150 m.

9

fruits secund.

prostrate from perennial
 root crown; flowers white.
 fruit somewhat immature.

flowers greenish,
 petals more or less carmine.

~~1913¹~~
~~1925 m.~~

1925 m. flowers white; stems
 many from root crown.

1925 m. flowers deep yellow.

1925 m. petals bright yellow.

1925 m. flowers bright yellow,
 bracts purplish.

1925 m. flowers purplish blue.

1925 m. flowers deep purplish
 blue.

1925 m. depressed shrub, 3 dm. tall;
 flowers bright rose.

1925 m. flowers whitish with
 yellow palate; bracts purplish.

10 1954 France

36006

3 common in low heath
 1 07 rare in low heath
 2 08 *Empetrum nigrum*
 common in low heath
 2 09 *Alchemilla alpina*
 occasional in low heath
 3 10 *Euphrasia*
 locally common in low heath
 2 11 *Rumex*
 common around great
 granite boulders
 1 12 ~~etc~~ occasional around
 granite rocks
 1 13 *Oxyria digyna*
 occasional around
 granite rocks.

Aug. north of Paris not
 far from Channel Coast.

Mostly open country, mainly
 in grain fields which are
 divided into strips, probably
 for rotation purposes.

A few patches of wood
 and around the villages
 a pattern of hedgerows
 surrounding rather
 irregular shaped fields.
 This pattern of hedgerow

Haute-Savoie

11

1725 m tufted
 1425 m spikelets dark bronze-brown.
 1575 m prostrate, mat-forming;
 fruit immature
 1525 m leaves silvery beneath;
 flowers greenish.
 1925 m flowers with ~~lips~~ upper
 lip lavender, ~~upper~~ lower
 lip with orange spot
 and dark line in throat.
 1850 m erect, from root crown;
 flowers reddish.
 1850 m flowers white.

1790 m flowers reddish.

surrounding villages
 and open fields between
 is characteristic of this
 part of the country.

Aug. 15 - London to Salisbury
 Mostly cultivated land with rather small fields, some small patches of heath and marsh, small woodlots here and there, pastures separated by hedgerows and rows of trees. Villages numerous and large.

Oaks, elms, some Robinia but scarcely forming thickets, Betula very common in small patches.
 Weybridge

Patches of Betula have ~~under~~ ground cover of Pteridium. Robinia all large ~~some~~ trees, few saplings. Pine becomes more common. Large patch of mixed woods of rather widely spaced trees with a thick understory just before West Byfleet.

Patches of heath-like open woods. Betula very common.

Woking.

Beyond W. Betula is most abundant tree. Pine very common. Pteridium most abundant ground cover. Cultivated

patches small.

Between farmways of golf course open wood, Pteridium, heather.

Then birch woods with admixture of other things.

Boxwood.

Open wood and heath, large patches of Alez, heather, birch wood. Limes very common, locally abundant.

Ponds with Nymphaea.

Patches, rather large, of pine woods, some birch. Heather on m. cuts. Pteridium abundant generally.

Then open pasture with scattered oaks, patches of wood, hedgerows.

Farnborough -

Cultivated fields and meadows. Hedgerows, patches of pine plantation, heath.

Large pond or lake near Fleet.

Cut-over land, broken birch and pine woods, meadows with hedgerows. Large pastures. Grain fields. Scattered oaks.

in hedges.

Winchfield

Birch brush and
patches of heather in
nr. cuts.

Grain fields separated
by hedgerows. Pasture.
Mustard field, few.

Same with some
patches of wood, largely
oak.

Then large patches of
mixed deciduous woods
and large grain fields.

Chalk exposed in cuts
just before Basingstoke.

After B. large open
grain fields and
pastures, separated
by hedgerows with
rows of trees here and there.
small patches of wood.

Mosly oak but
a little birch occasionally.
Oakley

A few beeches and some
conifers. pines. Still mostly
oaks.

Rolling country, open
but for hedgerows and
small bits of wood.

Mosly grain fields but
some meadows and pasture.
lone sheep. Cattle
same for some distance.

then pines become more
common with a
large patch of forest
with mixed broad leaf
trees and conifers.

then cuts showing
chalk for some
distance. then more
extensive open fields
with hedgerows,

fields becoming smaller
and hedges more numerous
as Andover Junction is
approached.

After A. J. more chalk
cuts. Conifers, even *Pinus*
sylvestris, and birches
common on tops of
hills. Robinia, but
few seedlings. Large
patch of wood,
rather dense, mainly
beech. Then open
grain fields. Hedgerow
between fields.

Hedgerows become larger
and more common.

then areas of abandoned
land with scattered
small trees mostly
birch, and large
masses of *Epilobium*
angustifolium.

Fields, patches of

wood, mostly Alnus(?)
grain fields with
thick hedgerows.

Then larger fields with
~~the~~ fewer and smaller
hedgerows near
Gratley. Mostly
grain.

Then large open
pastures on rolling
land with scattered
pines, no fences or
hedges. Then woods
and large grain field
with no hedges, a few
wire fences.

Woods largely beech.
Some pasture between
woods with small
bushes. Cuts show
chalk.

Then extensive open
fields, mostly pasture
some grain, on very
gently rolling land.
No hedges, but some
wire fences. Chalk in
cuts. Small plantations
of young pines.

Where rather hilly
this country looks like
downs. Smooth grass
with small bushes
in sparse patches and

some small areas of
wood.

A few hedges and
scattered trees.
Grain being harvested
toward Salisbury.

Aug. 15 - Salisbury Plain.

Rolling plain, somewhat dissected, on chalk foundation, but soil in places rather deep. Soil generally filled with flint or chert fragments. Brown, or under patches of wood, black and soft. The plain is partly in grain, partly in pasture, some of it cut for hay, scattered small patches of beech woods and small circular groves of beech trees. The trees in these quite large.

Aug. 15 - Salisbury Plain

about 1 km. e. of Stonehenge,

3 km. w. of Amesbury

36014 *Polygonum*

2 common in edge of grain field.

15 *Prunella*

occasional on weedy roadside

16 *Achillea millefolium* L.

occasional on weedy roadside

2 17 *Achillea millefolium* L.

common on weedy roadside

3 18. *Stachys*?

common on weedy roadside

both sheep and cattle grazed here. The grain crops look rather poor.

Stonehenge is in this plain, 2 mi. w. of Amesbury. It is maintained as a National Monument, is enclosed in a strong fence and the ground is covered by a closely clipped well tended lawn. The grass is in good condition despite trampling by hordes of people with their children. The rocks are covered by crustose lichens of several kinds.

Very few species of herbs in the beech grove examined - *Urtica dioica*, several grasses, *Primula* sp. (n.)

Stonehenge

342'

crossroad 300'

(map)

laths: 95 m.

twining on stems of barley,
flowers reddish.

flowers a deep rich purple.

flowers purplish pink.

- (growing with white form)

flowers white

- (growing with pink form)

ascending; calyx reddish; corolla pink.

July 17 - London to Cambridge -
 The entire distance is
 through gently rolling
 country. The cuts generally
 show chalk substratum.
 The greater part of the
 land is in grain fields,
 some of them separated by
 hedgerows. Some also are
 separated by narrow strips
 of woods a few yards wide.
 Woodlots are rare and mostly
 small. Poppies are common
 weeds in the grain fields and
 abundant in the rather rare
 fallow fields. Once or twice
 small beech groves were
 seen and in a few places
 scattered oak trees.

July 17 - London airport ^{air}
 southward to channel.

Mostly green fields,
 but at first several
 small patches of woods
 on low hills. Then a
 heath-like area but
 with some water in it
 (next to an airport). Then
 a number of fairly
 large patches of
 woods and many
 small woodlots. These
 are obviously being managed

for timber as the larger
 trees are in many cases
 localized and separated
 by patches of lower
 growth, this in some
 cases planted in rows.

The fields are of
 irregular shape,
 of medium size and
 generally separated by
 hedgerows and rows
 of trees.

Aug. 13 - Channe coast to Paris
Cultivation and pastures come right to tops of chalk cliffs - no woody vegetation of any kind at tops.

Further inland - sharp boundaries between ~~with~~
~~and south~~ ^{land} ~~steps~~ devoted to grain farming and to pasture. Fields in the ~~parts~~ ^{steps} in grain are either long and narrow or divided into long narrow sections.

Broad areas principally in pasture and bright green are divided into very irregular fields, separated by hedgerows ^{often} containing scattered or spaced trees probably fruit trees.

Woodlots occasional here and some quite large.

The grain and pasture lands are roughly in strips or bands, quite wide, running north or northeast and south or southwest.

The most striking contrast between this similar country in England and France is the pattern of cultivation in strips or

trapezoid-shaped sections in France. Not universal here but much more so than in England.

Further inland the grain and pasture become more intermixed and forest patches more common. Hedgerows become less common, only existing around occasional pastures. Forest in some limited regions comes to occupy almost 1/5 of the land. This just north or northwest of Paris. In Paris region the stiff pattern of fields is especially striking.

Forêt de St. Germain is an especially fine dense forest striking tessellate pattern of tree crowns.

Seine R. has elongate islands in most of its meandering course giving it the appearance of having generally a double channel.

24 1954 Virginia

* Aug. 25 - Timber Hollow Overlook,
Skyline Drive

36019 *Agastache scrophulariaefolia*
^{wild. 100%}

Aug. 26 - Milam's Gap

grassy slope

1 20 *Ribes hirtellum* var. *saxosum* (Hedg.) Steyermark
occasional

5 21 *Geranium columbinum* L.
common

Aug. 26 - Big Meadows
swamp with open boggy
places, surrounded by
brushy thickets and grassy
meadow.

2 22 *Habenaria viridis* var. *interjecta* Fern.
common locally in bog

2 23 *Malus Pyrus coronaria* L.
common in thickets in meadow

2 24 *Cypripedium angustifolium*
occasional in edges of, bog

3 25 *Rubus*
abundant around edges
of swamp

3 26 *Osmia Pyrus arbutifolia* (L.) L.f.
occasional in edges of, bog

2 27 *Rudbeckia laciniata*
common in bog

Shenandoah Nat. Park.

25

erect herb 1-1.3 m. tall; stems
sharply square; ~~co~~ bracts
purplish tinged; fl corollas
dull pinkish white;
flowers abundantly visited
by insects.

3251'

991 m

shrub 0.8 m. tall

branches procumbent,
flowers rose pink.

1080 m

small scrubby tree 4 m. tall
- apples green.

erect herb 1.3 m. tall;
flowers rose pink.

forming low tangles
3-4 dm. high; fruit black,
tart, edible.

shrub 1.5 m. tall, fruit red,
herb 1.5-2 m. tall, rays
bright yellow, disk greenish
yellow.

26 1954 Virginia

4 28 *Phalaris arundinacea* L.
very local in meadow,
around base of trees.

5 29 *Chondrilla juncea* L.
~~not~~ local in meadow

1 30 *Syringa vulgaris*
one old bush in meadow

1 31 *Hemerocallis fulva*
one patch in meadow

1 32 *Asclepias viridiflora* Raf.
rare in meadow

3 33 *Lycopodium tristachyrum*
local in meadow

Aug. 27 - Tanners Ridge Fire Road,
headwaters of Naked Creek
grassy meadow invaded
by shrubs and small trees.

2 34 *Plantago lanceolata* L.
in old cemetery

2 35 *Plantago rugelii* Decne.
in old cemetery

2 36 *Plantago major* L.
in old cemetery

4 37 *Lymphoricarpos albus* var. *laevigatus* (Tern.) Blak
spreading from old cemetery

1 38 *Pastinaca sativa*
weedy place near road

2 39 *Solanum carolinense* L.
common in weedy place

2 40 *Setaria viridis*
occasional along road

Shenandoah National Park 27

erect herb; flowers
yellow.

shrub 2 m. tall.

flowers greenish.

large patch; rhizome
~~the~~ deeply buried;
leaves bluish green.

2900-3300'
884-925 m.

caespitose

slender much branched
shrubs to 0.8 m. tall; flowers
rose pink; fruit white,
fleshy.

erect, up to 0.8 m. tall when
in tall Rubus; flowers lavender
to white.

spikes greenish.

2000 ft. elev.
28 1954 Virginia

3604 Rubus
22 in semi-shade, isolated plant.

3104 Rubus
in open, forming large colonies covering ground completely

3 43 Rubus
in open, forming large colonies covering ground.

3 44 Aster undulatus L.
rare on open slope

same - in woods on rocky slope.

5 45 Tilia americana L.
rare in second growth

2 46 Chenopodium album L. ?
very local along roadside

4 47 Ribes rotundifolium Michx. ?
occasional in edges of woods

2 48 Paronychia fastigiata
abundant locally on
rocky banks in openings

3 49 Polygonum convolvulus L. scandens.
common on weeds along road in openings

5 50 Polygonum tenue Michx.
common locally on rocky bank
in openings.

Shenandoah National Park 29

501 canes high-arching to erect,
up to 1.5 m. tall; fruit
black, juicy, good flavor
canes low-arching,
up to 0.5 m. rarely higher,
not rooting at ~~the~~ tips,
fruit black, globose, edible
but tart till dead-ripe.

canes low-arching to
prostrate, rooting at
tips, fruit globose, black
edible. leaves not rugose.
caespitose, flowers
bright lavender-violet,
disk pale yellow.

tree 12 m. tall; leaves
bluish green beneath;
fruit clusters pendent.
plant grayish green.

shrubs up to 0.8 m. tall
berries translucent whitish
(more than one bush in collection)

twinning vine, flowers whitish.

flowers white.

30 1954 Virginia

36051 *Amphicarpa bracteata* (L.) Fern.
common in edge of thickets
2 52 *Woodia obtusa* (Spreng.) Torr.
rare on rocky bank
2 53 *Edyptis purpurea* var
common on rocky slope

Aug. 28 - Gravel Ridge, above
Pass Run

Weedy thickets along road
2 54 *Digitaria ischaemum* (Schreb.) Muell.
weedy roadsides
2 55 *Muhlenbergia schreberi*
weedy roadside
2 56 *Festuca arundinacea* Schreb.
weedy road embankment
2 57 *Euphorbia dentata* Michx.
rare, weedy roadside
1 58 *Solanum nigrum* L.
rare, edge of thicket
2 59 *Panicum dichotomaeflorum* Michx.
occasional, weedy roadside
2 60 *Chenopodium album* L.
common, weedy road bank
2 61 *Morus rubra* L.
~~—~~
2 62 *Festuca elatior*
occasional, weedy roadside
1 63 *Bromus*
occasional on weedy road bank
3 64 *Celtis occidentalis*
~~65 *Capparis petiolata* (L.) Koch~~
~~occasional on weedy roadside~~
2 66 *Acer saccharinum* L.
common

No. Chenandoah Nat. Park

31

vining vine, flowers
lavender.

mostly tract flowering,
flowers pale lavender?

det. F. R. Fosberg

culms ascending, leaves
very slightly glaucous.

culms ascending
ascending, lactiferous.
flowers white.
culms somewhat ascending
herb up to 0.8 m. tall.

spreading tree 3 m. tall.
culms ascending.

tree 10 m. tall.
~~petals deep magenta~~

large tree 12 m. tall; leaves
glaucous beneath.

No.

det. F. R. Fosberg

30 1954 Virginia

36051 *Amphicarpa bracteata* (L.) Fern.
common in edges of thickets
2 52 *Woodia obtusa* (Sprng.) Torr.
rare in rocky banks
2 53 *Pedypotis purpurea* var
common on rocky slope

Aug. 28 - Gravel Ridge above
Pass Run

Weedy thickets along road
2 54 *Digitaria ischaemum* (Schreb) Muell.
weedy roadsides
2 55 *Muhlenbergia schreberi*
weedy roadsides
2 56 *Festuca arundinacea* Schreb.
weedy road embankment
2 57 *Euphorbia dentata* Michx.
rare, weedy roadside
1 58 *Solanum nigrum* L.
rare, edge of thicket
2 59 *Panicum dichotomaeflorum* Michx.
occasional, weedy roadside
2 60 *Chenopodium album* L.
common, weedy road bank
2 61 *Morus rubra* L.
~~62~~
2 62 *Festuca elatior*
occasional, weedy roadside
1 63 *Bromus*
occasional on weedy road bank
3 64 *Celtis occidentalis*
~~65~~ *Cophea petiolata* (L.) Koch ex
occasional on weedy roadside
2 66 *Acer saccharinum* L.
common

1600' 31
Fernando Nat. Park

twinning vine, flowers
lavender.

mostly tract flowering,
flowers pale lavender.

culms ascending, leaves
very slightly glaucous.

culms ascending
ascending, lactiferous.

flowers white.

culms somewhat ascending
herb up to 0.8 m. tall.

spreading tree 3 m. tall.

culms ascending.

tree 10 m. tall.

~~petals deep magenta~~

large tree 12 m. tall; leaves
glaucous beneath.

Aug. 28 - Hazel Mountain
Overlook Skyline Drive.

36066 2 Cuphea petiolata (L.) Kochne
roadside
2 67 Cassia fasciculata Michx.
abundant locally along road.

Aug. 28 Little Stony Man,
east slope.

2 68 Aster acuminatus
in dense low
~~dead~~ woods
2 69 Galium triflorum Michx.
along trail in woods
2 70 Viola canadensis L.
along trail in woods

1 71 Polygonum convolvulus L.
along trail in woods
2 72 Polygonum punctatum var.
leptocephalum (Meissn.) Small
along trail in woods
3 73 Chenopodium hybridum
var. gigantospermum (Coll.) Rod.
along trail in woods
1 74 Solanum nigrum
along trail in woods
3 75 Campanula divaricata
common on steep rocky
road cut
3 76 Campanula divaricata f. alba
small colony on steep
rocky road cut (with blue form)
2 77 Gaylussacia baccata (Pursh)
occasional on steep
rocky road cut.

petals deep red-purple.

erect, flowers white
reclining.

stems trailing to ascending,
flowers white purplish
outside, 3 lower petals
lined with black
inside near base.
twining, flowers white.

(Meissn.) Small

erect, green.

flowers white.

caespitose;
flowers blue-violet.

caespitose;
flowers pure white

shrub 0.4 m. tall;
fruit glossy, black.

34

1954 Virginia

Aug. 28 - $\frac{1}{2}$ mi. n. of

Horsefare Mt.

Overlook, Skyline Drive

36078

Gentiana andrewsii Griseb.Fair-sized colony in open
~~cleared~~ road cut.

Aug. 29 - Big Meadows,

west slope below Lodge

3500'

Thin woods, mostly
small trees, on rocky ground3 79 *Populus grandidentata*

small colony in

1 80 *Aster undulatus* L.

rare in

2 81 *Aster*

rare in

Aug. 29 - Appalachian Trail

3100'

south of Fisher Gap

2 82 *Galium lanceolatum* Torr.rare in hemlock grove
in deep litter.

Aug. 29 - east slope of

3040'

Fisher Gap, on fire road

3 83 *Cyperus strigosus* L.

moist place beside road

Aug. 29 - just north of

3000'

Dark Hollow Falls on fire road.

on road-cut in fine soil in thin
dryish woods.3 84 *Lespedeza hirta* L.?

Shenandoah Nat. Park

35

perennial from thick
crown, flowers blue-violet,
closed, lobes subequal
with paler intervening
membrane.

small trees 5-6 m. tall.

erect, rays bright lavender,
disk yellow.erect, rays bright lavender,
disk yellow, turning red.

rhizome and roots yellow.

culms isolated or 2 or 3 in a
tuft, spikelets pale green.erect; flowers pale lavender
with maroon centers.

36

1954 Virginia

36075 85 *Lespedeza capitata* var. *calycina*?
 3 86 *Lespedeza intermedia*
 1 87 *Desmodium*
 rare
 2 88 *Agrocypon repens* L.
 local along roadside

Aug. 29 Dark Hollow Falls

3000'

2 89 *Hedum ternatum* Michx.
 very local along trail
 2 90 *Angelica atropurpurea*
 in moist mixed hemlock -
 birch-maple woods at
 foot of falls.
 1 91 *Actaea pachypoda* Ell.
 same
 1 92 *Lycopodium lucidulum*
 same, rare
 2 93 *Pilea pumila* (L.) Gray
 common on densely shaded
 rock cliffs
 3 94 *Dryopteris austriaca* (Jacq.) Gray
 common on densely
 shaded rock cliffs
 1 95
 occasional along trail
 in woods,

Shenandoah Nat. Park 37

— erect; flowers whitish.
 — erect; flowers purple.
 — erect; flowers purple.

leaves gray-green, fleshy,
 ternate, congested at
 tips of stems.
 coarse herb 1.2 m. tall.

pedicels thick, red, berries
 white.

erect, stem fleshy,
 translucent.

rhizome short, erect.

Aug. 30 just north of The Oaks 3125'

Overlooks

Dense moist deciduous
oak, on flat, thin understory,
rich herb layer.

36096 3 *Galium circaeans*
occasional in deep litter

1 97 *Oxalis europaea* f. *cymosa* (L.) Wieg
roadsides

1 98 *Botrychium virginianum*
occasional in litter

3 99 *Aster divaricatus* L.
common

36100 2 *Acer negundo* L.
rare in understory

2 01 *Campanula americana* L.
rare in edge of woods

2 02 *Chenopodium bosniacum* Moq.
common in edge of woods

Aug. 30 - South River Picnic

Ground

weedy ground under
sparse trees

3 03 *Paronychia procumbens montana*
common

3 04 *Paronychia canadensis*
common

3 05 *Chenopodium bosniacum*
common

3 06 *Chenopodium album*
common

3 07 *Oxalis europaea*
common

trees mostly 15-20 m. tall
1.5-3 dm. thick, deep leaf-litter
on ground, soil brown.

flowers yellow.

rays white, disk yellow,
— ~~petals~~ turning reddish.
shrub 2 m. tall, stems green,
erect herb to 1 m. tall;
— flower light blue.
leaves dull green.

growing with #36104 but
— not intergrading with it.
growing with #36103 but
— not intergrading with it.
erect, green; growing with
— #36106 but not intergrading with it.
erect, whitish; growing with
— #36105 but not intergrading with it.
erect, flowers yellow.
(possibly f. *europaea* and f. *cymosa*
are both mixed here, if they mean anything)

40

1954 Virginia

36107 2 *Lysimachia officinalis* var. *leucocarpum* DC.
common

08a 08a *Lysimachia officinalis* var. *officinalis*
Aug. 30 - Bearpence shelter.

09 Clintonia
local in moist humus
in thick woods on flat
ground in cove.

10 *Ilex montana* T. & G.
in low brushy wood on ridge

11 *Ilex montana* T. & G.
in *Quercus ilicifolia* scrub

Shenandoah Nat. Park 41

erect; flowers yellow
(with var. *officinalis*)

erect, flowers yellow (with var.
leucocarpum)

981 m. ripe fruit blue-black

989 m. shrub 3 m. tall, fruits
reddish green (some picked
up under bush).

1006 m. -
shrub 2 m. tall, leaves
yellow-green; fruit reddish green.

Aug. 30 - Hazel Top Ridge Overlook 3205'

2 12 *Digitaria sanguinalis*
weedy roadside

2 13 *Polygonum erectum* L.

7 14 *Taraxacum*

1 15 *Taraxacum*

4 16 *Taraxacum*

2 17 *Amaranthus hybridus* L.
common

stems ascending, flowers
whitish.

plant green.

Aug. 30 - Big meadows

36118 1 Gaura biennis
on roadside banks
around ranger station.

19 Smilac herbacea
edge of swamp, in
low thicket,

20 Vicia angustifolia
in meadow

21 Gentiana quinquefolia L.
sax in meadow

22 Ilex montana
rare in meadow

23 Lycopodium complanatum
common on ~~open~~ grassy
slopes with scattered brush

Aug. 31 - same

24 Cirsium pumilum (Nutt.) Spreng.
common in meadow

25 edge of swamp

26 Eupatorium fistulosum
rare in bog

27 Oenothera
rare in bog

28 Aster
occasional in bog

erect, branched at base
from root crown, petals
and stamens white, calyx
bronze-red.
vine, very glaucous.

flowers pink.

erect; flowers purple.

shrub 1.5 m. tall; fruit green.

spreading colonies;
form with sterile tips to
spikes.

generally less than 0.7 m.
tall; flowers fragrant,
bright rose purple,
attractive; large butterflies;
seeds eaten by goldfinches.
erect

stem purple, hollow
in upper parts; flower pink-purple
erect herb, browsed by deer;
flowers light yellow.
rays bright purple;
disk greenish yellow,
turning reddish.

44

1954 Virginia

Aug. 31 - Franklin Cliffs

36129 2 *Cyperus filiculmis*
roadside

3 30 *Amaranthus cruentus* L.
roadside

1 31 ~~Strobolus~~ *Panicum capillare*
roadside

2 32 *Eragrostis capillaris*
in pockets of black
soil on top of rocks.

Aug. 31 Old Rag View Overlook,
Skyline DriveOpen meadow being
invaded by shrubs.

2 33 *Yucca filamentosa*
single clump near road

2 34 *Heliarthrus*
one small colony

1 35 *Botrychium multifidum*,
rare ~~siliculosum~~

4 36 *Gentiana quinquefolia* L.
common locally

2 37 *Lycopodium complanatum*
occasional

1 38 *Asplenium hyperboreoides*
rare

Shenandoah Nat. Park

45

caespitose

spikes reddish

depressed, culms
only slightly ascending.

caespitose

rosette with

remains of old spike

rays yellow.

flowers blue-violet.

rhizome on surface of ground.
(slight tendency toward
stem tip to spikes).pale dull green; flowers
yellow, 4-merous.

46 1954 Virginia

Aug. 31 - Old Rag Fire Road
Lumberlost to Lumberlost

Mixed hemlock and oak
forest, flat ground
36139 *Lonicera sempervirens*
rare in roadside thicket

1140 *Monotropa hypopithys*
var. *nitra*

rare in deep humus

1141 *Corallorrhiza odontorhiza* (Willd.) Nees
rare in deep humus

5542 *Corallorrhiza maculata* Raf.
common in deep humus
in dense shade

1143 *Monotropa uniflora*
rare in deep humus

1144 *Lycopodium lucidulum*
rare in deep humus

21145 *Paronychia*
rare in roadbed

47
Fernando Nat. Park

weak shrub; leaves
white beneath, green
above; fruit red, fleshy.
upper part of stem
coral red, flowers
drying, straw colored
or only very slightly reddish.
stem bronze purple,
lip ^{unlobed} white with purple ~~dots~~,
young fruit green.

stem bronze-tan; lip
white with purple spots,
2 folds on palate, 2 sharp
basal lobes; fruit same
color as stem, variable in
length-width ratio.
stem and lower two third
of corolla pale rose-pink,
leaves and tips of petals
whitish.

48

1994 Virginia

Sept. 4 - 13 mi. S. of

Richmond

powerline right-of-way
with principally
weedy herb cover.36146 *Solidago odora* L.
abundant1147 *Eupatorium pubescens* Muhl.
abundant

2 power-line parallel
in a single right-of-way
but 2 strips being managed
separately. One strip
saplings of several
oaks, ~~and~~ *Quercus*, some
Liquidambar, some *Carya*,
a little *Acer rubrum* and
Liriodendron. ~~had been~~
up to 3 m. tall were being
cut, leaving stubs
a few inches to a foot
tall. In the other
cutting had been at
least a couple of years
ago. Here *Solidago* and
Eupatorium are most
conspicuous and abundant
but sprouts of *Liquid-*
ambar are abundant
also, *Pueraria* (*mandshurica* &
velutina or *velutina*)
common, with occasional

with
F. E. Egler

Chesterfield Co.

49

leaves with pleasantly
resinous odor but
not anise-scented.
flowers white.

Carya sp.
Bassia par
Rhus copallina
R. glabra
Vaccinium varillana
Smilax glauca (?)
Rubus sp.
Desmodium, etc.

Nearby forest
mixed *Pinus taeda*
and oaks, a little
Fragaria and *Liriodendron*;
understory of
~~some~~ *Liquidambar*
with some *Cornus florida*
and *Mysma syrtatic*.
Trees in dominant
layer about 30 m. tall,
2-3 dm. thick.

Sept. 4 - 2 mi. w. of
Petersburg

Ild fields with
thickets of *Prunus*
angustifolia, spaced
generally less than 1 m.
3-4 m tall, probably
spreading by underground
stems or by root sprouting.

Sept. 4 - 4 mi. e. of
Church Road

Clear ~~power~~ ^{telephone} power-line right-of-way

(A.T.T. pole no. 387) in *Pinus taeda* forest

- 36148 *Andropogon virginicus* L.
common in grassy area
- 1149 *Andropogon scoparius* L.
common in grassy area
- 1150 *Andropogon cf. mohrii* n. sp. n.
occasional in grassy area
- 1151 *Andropogon virginicus* var.
occasional in grassy area
- 1152 *Andropogon virginicus*
in grassy area

Sept. 4 - 7 mi. e. of
Church Rd.

power-line right-of-way.
Cut stumps 1-1.5 dm.
thick mostly pine,
some liquidambar,
then latter sprouting.
Mainly a mixed
herb cover, *Holodiscus*,
Eupatorium, etc.

A strip of grass
Andropogon across
this in one place. here
were pine seedlings,
none seen in broad-leaf
herb cover
surrounding forest -
young *Pinus taeda* - *Liquidambar*.

erect, somewhat glaucous
erect, green.

- very glaucous, leaves
- very equitant, stiff
- subglaucous, leaves
- very equitant, somewhat stiff
glaucous, leaves very
equitant, stiff.

52

1955 - 1 - 1 - 1 - 1 - 1 -

with
F. T. Eggers

36 53 *Vaccinium vaccinoides* or *eremicum*?
54 ..
55 ..

Mixed *Pinus taeda* -
~~P.~~ *rigida* forest,
not very dense, with
an understory 1-3 m.
Tall of other trees pine
and *Cornus florida*
some large *Vaccinium* etc.
The density of the
pine in understory
varies and is very
roughly inversely
proportional to the density
of the dominant stand.

Sept. 4 - 6 mi. e. of
Blackstone, west of
Wilson's. Dinwiddie Co. Nottoway Co.
Electric power line
right-of-way in a
forest of *Liquidambar*,
Quercus, *Ace. rubrum*,
Mrysia, etc.

Had been blanket-sprayed
with a brush-killer
~~which~~ probably one
year before. Pine
saplings killed
completely, oaks,

Dinwiddie Co.

53

spreading low patches
leaves glaucous beneath.

Through this is a
narrow telephone line
right-of-way, varying
in width, grassy
(*Andropogon*) with
some blueberry patches.
Andropogon gerardii
dominant in low
places, *A. virginicus*
and *A. scoparius* in
others. Pine seedlings
in grass, except in
very narrow parts of
right-of-way, not in
blueberry patches (photos).

Liquidambar, *Acer*
rubrum, *Liriodendron*
all sprouting vigor-
ously from roots of
ones killed back by
spray.

Sept. 5 - Lee Experimental Forest, west of Lurayville. Oaks forest with some Carrizo and other deciduous trees, very few pines.

Egler had set up a brush control experiment on ~~this~~ an R.E.A. right-of-way which cut across this forest. This had been done in cooperation with the Forest Service under whose jurisdiction the Lee Forest comes, as an isolated part of the Jefferson National Forest. This had been carefully studied, then one longitudinal half sprayed, the other not. The whole area was perhaps a quarter of a mile long. Careful work had been done on visits in 1952 with

The R.E.A. Co-op in August adopted a policy of brush control by bulldozing and had cleaned their entire right-of-way system, including the part in Lee Forest where the experiment was set up, this with the consent of the Forest

service research supervisor in the area.

The bulldozing was down to bare soil - some roots left intact, some of them and a few stumps beginning to sprout, but very few.

Bedford, Amherst and Rockbridge Counties.

Sept. 5 followed A.T. & T. line right-of-way from Lynchburg to Natural Bridge, examining it wherever the highway crossed or approached it. Also examined at several places a high tension electric power line crossing the mountain through the gap of the James River.

This right-of-way had been hand-cut every year between 1936 and 1946, again in 1948, then in 1948 a 9 blanket sprayed with a ~~sweet~~ brush-killer, then again in 1951. Examined hastily by Egler in 1952. Now the trees seem to be coming back vigorously. Several sites discussed individually. (cont.)

Bedford Co.

Sept. 5 - 10 mi. n.w. of
Lynchburg (A.T. pole 4792)

just
below
eagle
gap
which
is 1700'
A stretch of right-of-way
running through a
mixed second-growth
deciduous forest of
Quercus spp., *Prunus*
serotina, *Carya* spp.,
Acer rubrum, *Nyssa sylvatica*
etc. with large chestnut
stumps. Medium
canopy - tree seedling
or sprouts, various
herbs, thin *Sonchus*
japonicus, common small
plants, a few con. to 2-3
dm. tall, of *Lymphopogon*
obtusilatus, a little
~~and~~ *Celastrus scandens*.

- The right-of-way
is covered by a sparse
stand of sprouts of
- a *Ailanthus altissima*
- * *Cercis canadensis*
- o *Diospyros virginiana*
- o *Carya* spp.
- c *Rhus glabra*
- o *Acer rubrum*
- c *Quercus alba*
- o *Corus florida*
- cc *Passiflora albidum*
- o *Quercus prinus*
- c *Robinia pseudo-acacia*

This is tangled
together by a low
growth of various herbs,
Panicum, an abundant
low *Rubus*, one or more
high *Rubi*, *Fimbristylis*,
Andropogon gerardii
and much *Lymphopogon*
obtusilatus, this large
and vigorous.

Just farther up (at
pole 4806) the sprouts
of about the same density,
but largely *Cercis*.
Few if any place apple
trees have apparently
been unaffected by
the spraying.

West of this (at pole 4947)
there are mostly herbs
and *Lymphopogon*,
with *Andropogon gerardii*
and occasional sprout
or saplings of *Ailanthus*,
Passiflora, pine, *Diospyros*,
just farther as many
of *Ailanthus* with
patches of *Rubus* and
occasional *Robinia*.

Back, on top of hill, are
vines 2 m. tall that
survived spraying, also

Castanea pumila, small but in fruit. Way back (with glass) very brushy - pine, cornus florida?, Acer?

Northwest of this, 2 miles before Big Island (pole 4989) where the right of way is on flat ground again is a grassland of Andropogon scoparius apparently brought about by the spraying.

In this are saplings of Pinus virginiana, sassafras albidum, Diospyros virginiana, Cornus florida, Acer rubrum, Liquidambar, Carya spp., Celtis canadensis, Fraxinus americana in about this order of abundance, but sparingly. Some of the pines certainly survived the spraying, as they are 1.5 m. or more tall. Others vary down to a foot or even less.

This is lined, in back, by a solid stand of young 4-5 m. pines and by a ~~sloping~~ slope wooded chiefly by Lindernia but mixed with other

Further west (pole 5056) the right of way is covered by a dense stand, 1 m. tall, of Lychnophorcarpus obiculatus, Desmodium spp.

Polygonatum americanum, other herbs, a little Andropogon, some Rubus, some pine seedlings, some Diospyros sprouts or seedlings.

Amherst Co.

Near Snodden, James River Dam and Reservoir, just west of bridge over James River (pole 5356)

Right of way here is on a steep slope above road cut. It ~~has been~~ shows abundant evidence of spraying in form of dead sticks. It is rather open with Andropogon and some other herbs, with scattered sprouts or seedlings of Quercus spp.

Pinus
Diospyros
Gilanthis
Lindernia
Rubus
Smilax
It 1 m. tall. Above it

and contiguous is a right-of-way for an electric power line with more or less the same species of trees & shrubs but several times as tall and more abundant.

Just n. w. of Knowlton a right-of-way for a high tension line which had been hand cut 2 years ago shows a solid scrub, 2-3 m. tall, of Robinia

Quercus spp.

Liriodendron

Platanus

Aralia spinosa

Cornus florida

Bambusa canadensis

Rhus spp.

Sassafras

Acer negundo

Acer rubrum

Ceris

in interstices is a low layer of *Rhus* coexisting some *Vaccinium*, rather few herbs.

several miles west of here is a steep slope with the right-of-way of the A.T. & T. (pole 5442) where it had burned less than a year ago. There are still many oak and Robinia saplings, *Prunus* scoulerii, with locally, in the burned area, an abundance of *Sophastrum nutans*. A few herbs and some ericads, incl. esp. *Kalmia latifolia*, but with much bare ground and rocks.

Just farther along, where not burned, very similar, ~~a few~~ some pine seedlings, no *Sophastrum*, somewhat more herbs, especially on ridge-top.

A mile and more west of here, south of Glasgow, is a small dam, power plant and electric substation.

Here the right-of-way of the high-tension line had been sprayed recently from the west. The top-grill of the 1-2 m. shrubs was conspicuous, but

much green shown between the plants.

The A.T. & T. line right of-way is covered by thick low brush, 1 m. or more high, mainly oak sprouts and *Stenocarpus*.

Things made evident during this trip, either by observation or discussion:

Actual invasion by establishment of seedlings, especially in brush, and even in grass, much less frequent than generally believed. Common with pines, but other trees may likely have come in at time of grassland a brush ~~got~~ started or even more likely, to be sprouts from roots, stubs, etc.

that have remained dormant in ground. Seedlings can remain in either a semi-dormant condition or continually bitten off by rodents, for a long time and small size does not mean that a seedling is very young.

T. S. E. does not think

that trees will often invade brush of most kinds in eastern U.S.

Blanket spraying seems generally ineffective more than temporarily, as roots are often not effected. Pines are resistant and also invade grassland produced if bill is effective. Spraying also kills Ericaceae which form a very stable cover and thus increases chance for invasion. Pines seem to invade *Andropogon* much more effectively than a stand of *Holodago* and other broad-leaved herbs.

Succession is of two fundamentally different sorts - physiognomic emergence and dominance or prominence, successively, of different components of original composition - and successive invasion by new plants - relay succession in Egler terminology.

Sept. 5 near Big Island,
James River, Bedford Co.
open plow-line right-of-way
in woods.

36156 *Actinomeris alternifolia* (L.) Bl.
common

Sept. 5 - same

2 v. 37 *Lespedeza virginica* (L.) Britt.
common along roadside

Sept. 5 - near Concord,
12 mi. east of Lynchburg, Campbell Co.
steep road cut

36158 *Lespedeza*
local on

36159 *Lespedeza*
local on

36160 *Lespedeza cuneata* (Dum.) G. Don!
common on

36162 *Lespedeza cuneata* (Dum.) G. Don?
~~local~~ common on

Lespedeza
local

36161 *Lespedeza*
local on

36163 *Lespedeza stipulacea*
common along road

buds yellow.

erect; flowers purple,
much deeper in the center.

plant 1.5 m. tall, branched,
flowers ~~bright~~ bright purple.

plant 1.5 m. tall, branched,
flowers purple.

flower purplish white.

stems somewhat
ascending, flowers
cream white with
dark purple centers.

plant 1.5 m. tall, flowers
bright purple.

flowers purplish.

Sept. 11 - Alexandria,
(3 mi. w. n. w. of downtown)
open field dominated by
Ambrosia artemisiæfolia

36164 Trichostema
rare on bare ground in
1 1165 Trichostema
rare on bare ground in

Sept. 12 3 mi. w. of
Middleburg
4 1166 Trichostema
locally abundant
on rock outcropping
in open at edge of ravine

Sept. 11 - Alexandria
3 mi. w. n. w. of downtown
Open field belonging
to High School, partly
used as baseball field,
the remainder mowed
at least annually.

About $\frac{1}{3}$ of field, the
baseball diamond, was
apparently completely
bare ground at the
beginning of this
season. It is now
a solid stand of Ambrosia
artemisiæfolia with
a scattering of other
pioneer plants. Around
the edges are a few patches

flowers blue-violet.

flowers clear pink
(with blue-violet form)

flowers blue-violet

of perennials incl. *Rubus*.
Opps. composition of vegetation
of this area:

- a. *Ambrosia artemisiæfolia*
- c *Lespedeza striata*
- c *Plantago lanceolata*
- o *Bidens frondosa*
- o *Daucus carota*
- o *Plantago rugelii*
- lao *Folidaea juncea*
- n *Juncus tenuis*
- n *Trichostema*
- r *Acalypha*
- r *Diiodia tere*
- r *Euphorbia supina*
- r *Solanum carolinianum*
- r *Aster ericoides*
- r *Rhus toxicodendron*
- d *Rubus argutus*

- 1 *Rubus flagellaris* (?)
- 1 *Eupatorium coelestinum*
- 1 *Eupatorium* sp.
- n.e. *Taraxacum* sp.

The rest of the field, except the strip adjacent to the road, is a sparse grassland of *Dactylis*, *Phleum*, *Poa*, *Fimbristylis*, etc. with much *Ambrosia artemisiæfolia* and *Hedysarum striata*. Tree seedlings are present, but very sparse. Practically all have been mowed at least once, mostly probably repeatedly.

Two transects east and west, about 100 m. and 6 m. w. had tree seedlings as follows:

Trans. 1.	1-2 year old	older
<i>Morus alba</i>	2	7
<i>Prunus serotina</i>	5	32
<i>Platanus occid.</i>		1
<i>Fraxinus amer.</i>	1	12
<i>Larix laricina</i>		1
<i>Juniperus virginiana</i>	1	8

This transect about 60 m. from the fence.

Another, parallel to it but about 40 m. from fence had following:

<i>Liquidambar</i>	"	older
<i>Fraxinus americana</i>		?
<i>Prunus serotina</i>	3	11
<i>Morus alba</i>		1

The fence parallels the road. On the other side of the road are houses with older trees irregularly distributed. There are several large *Fraxinus*, 1 *Diospyros*, several junipers, several *Robinia*, 1 *Pinus virginiana*, 1 *Quercus stellata*, 3 liquidambar (one very large), 1 *Prunus serotina*, one cherry, 2 *Catalpa*, 1 *Acer rubrum*.

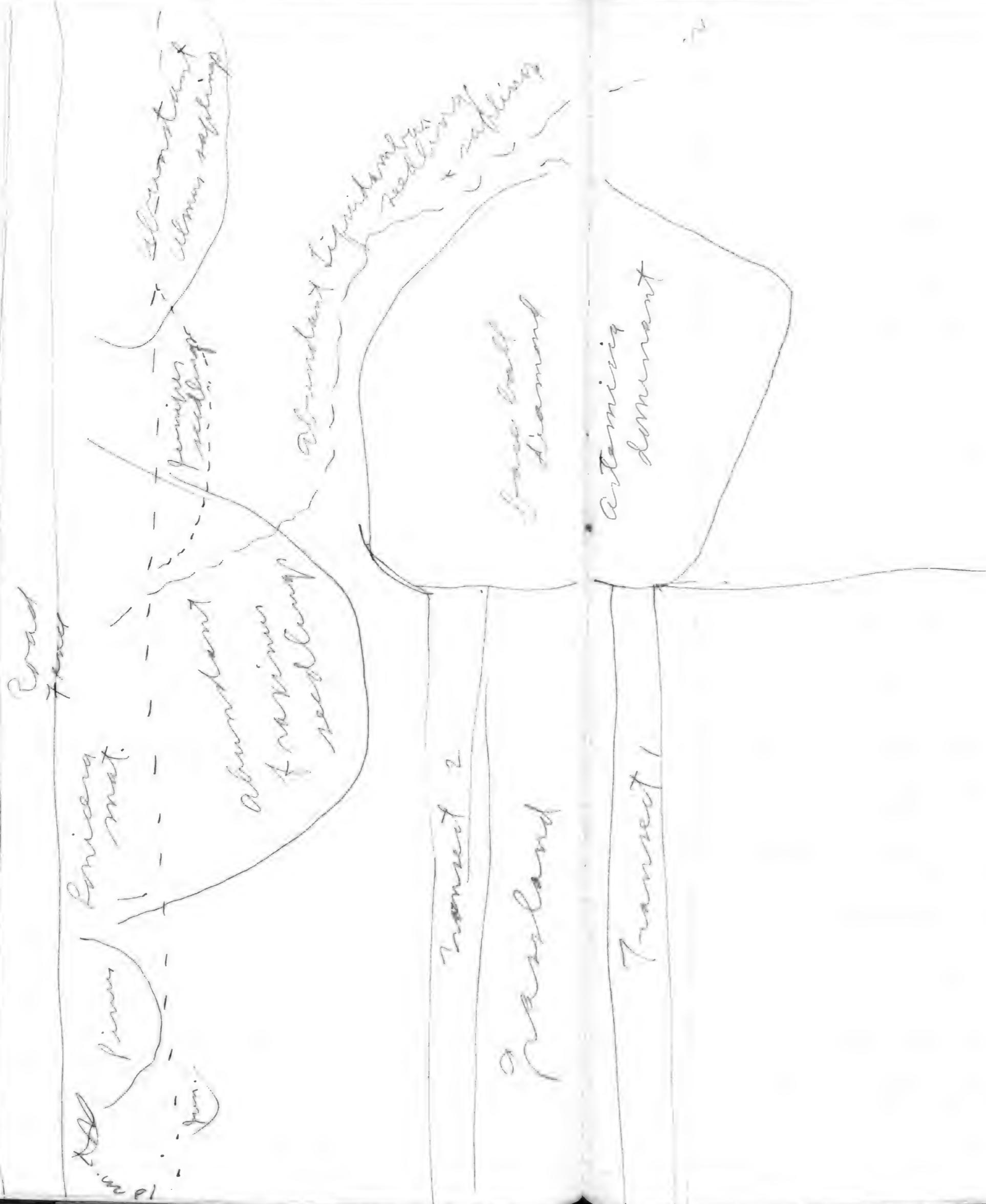
The distribution of seedlings in the field in some respects reflects the arrangement of these trees.

The 10 m. along the fence in the field is a blanket of *Lonicera japonica*, with scattered ash saplings 0.5-2 m. tall, a few small saplings of *Prunus serotina*, a few locally of *Robinia*, a few locally each of *Pinus* and *Juniperus*.

The next 17 m. is a belt where seedlings are locally abundant. The distribution is diagrammed next p.

e R R C Rd T R L P R R R R
f. Pi D T T C A L g R f ft

70



71

Sept. 19 - Hoadly

low ~~de~~ second growth
deciduous woods

36167 *Lycopodium complanatum*:
var. *flabelliform*
common in large patches;
368 *Pyrola americana*
~~common~~ in

Mixed young
second growth wood,
trees up to 15, rarely 20 cm.
thick, 10 rarely 15 m. tall.
Cornus, *Acer*, *Nyssa*,
Quercus spp., *Liquidambar*,
Carya, *Pinus virginiana*,
Prunus serotina,

Sparse second story
of saplings of these,
with *Kalmia*, *Vaccinium*,
Viburnum acerifolium,
Lianas such as *Vitis*,
Smilax rotundifolia,
Panthenocissus

Ground cover - abundant
Mitchella, locally
large patches of *Lycopodium*
complanatum, occasional
Dennstaedtia, *Pyrola*,
Goodyera, ~~Desmodium~~,

rhizomes on surface
of ground under dead leaves,
fruiting branches erect.

On even slightly
higher ground the
undergrowth becomes
more abundant and
Vaccinium a more
important component.
the ground cover become
more sparse
Chimaphila maculata
general, *C. umbellata*
local in bright spots
esp. under pines.

Ilex opaca + *Polystichum*
seen here, more common
than slightly lower.

In some low areas
Osmunda regalis and
~~Carex~~ sp. form large
very sparse colonies.

Junipers only under trees of old orchard on one side.
Dense plum thicket (from root sprouts, ?) 2-3 m. tall 2-4 dm. apart,
10 m. across around an old planted plum tree.

1951 Virginia Last plowed
west of Duvall house. ^{in 1944}
Abandoned field of ^{part of it} golden
10-15 acres, dominated
at this time by Solidago
and Aster, with
various other herbaceous
species, ^{partly} ~~and~~ Andropogon
surrounded
by second-growth woods -
on one side almost
solid *Pinus virginiana*
on another mainly mixed
deciduous but with
a few pines locally, others mix
Andropogon dominant
locally, also *Pycnanthemum*
flexuosum.

Rubus, mostly dewberries
local, young. *Rhus copallina*
scattered locally.

Seedlings and saplings
most numerous nearer
edges of field.

Also most numerous
in Andropogon areas, but
this probably because
these are larger near the
edges.

Nowhere except in
~~two~~ two small patches
of pine is the sapling-
seedling population
enough to make a forest
when grown.

Andropogon
perhaps
not since
1939.

A few scattered
Pinus virginiana
~~seedling~~ saplings,
a very few *Juniperus*
virginiana, and
a very few deciduous
saplings showing
above the goldenrod
cover.

Seedlings seen ^{about 500 m. S.}
walking through this
tree seedling (^{< 0.5 m.}) sapling ¹⁵⁺



Drosera 1

Nyssa ssp. 1

Pinus rigida 1

Liquidambar 1

Pinus virginiana 25 25 50 25 100 25 25
17 25 12 15 17 17 17 17 17 17
11

Quercus phellos 1

Acer rubrum 1

Sassafras 1

One corner of field has not been plowed for about 20 years. This has scattered young *Pinus strobus*. 3-4 m. tall with many younger ones of all ages between.

General ground cover mixed *Andropogon* and *Solidago*. *Aster*, *newberry*, etc. patches of *Rhus cop.*

Broad leaf saplings

Liriodendron III

Nyssa III

Quercus alba + (some *opposita*)

Q. velutina ^{"vel."} II

Corus pl. I

Juniperus I

Acer rub. NHII

Seedlings

Morus I

Acer rub. IIIII

Q. velutina ^{"vel."} NH

Nyssa II

Quercus phellos I

Q. stellata? I

Q. falcata I

One *Prunus* seedling sapling at edge of this area.

A few scattered *Vaccinium* of several sp.

Very few 3-5 m. *Quercus*
Q. stellata
Q. alba *Q. falcata*

In a denser patch of 3-6 m. pines are numerous some young *Q. velutina* & *falcata*
Q. alba *Q. stellata*
Acer rubrum. *Fraxinus* one.
Fagus

Very light pasturing till perhaps 20 years ago.

The pines are producing seed and the abundant young ones may be from these.

Pine seems to come into *Solidago*-*Andropogon* as easily as in *Andropogon*.

Rubus angustif. coming in locally more in sparsely wooded area than in open field.

(south of Darlington)

Another field never farmed much. surrounded by deciduous trees - prob. not plowed in 10-15 years.

Dominated by *Folliago*. A few scattered pines of varying sizes.

Robinia from 6 m. tall down to less than 1 m. scattered over the field.

1 *Populus deltoides*

9 *Sassafras* along on sides

Rubus arguta: very common but not yet dominant except very locally.

One half plowed more recently 8-10 years ??

Seedlings + saplings

Acer rubrum IIIIIIIIII

Prunus ser. IIII

Quercus vel. ? I

Liriodendron II

Pine as common here as in older forest but maximum ht. 1 m.

Only very locally are seedlings numerous enough to produce closed woods. (*Pinus*)

In general, few seedlings could be persisting from first pioneer stands of plants, no where enough to make a forest. Pine colonizes freely in herbaceous vegetation to at least 20 years old.

On a farm such as this the history is likely to be so confused, with sporadic cutting of brush, sporadic plowing of small patches, occasional light pasturing etc. that even a good observer who has lived in the place cannot give a dependable detailed history.

The chance distribution depending on the location of seed trees is more important in the location of the young trees than any other factors.

~~new checked~~
80

1954 Virginia

Sept. 19 - Haadly

36169 *Lycopodium complanatum*
in low second-growth,
deciduous woods.

✓ 36170 *Setaria italicum*
volunteer in patch of
sorghum.

Prince William Co.

81

rhizome on surface of
ground, under leaves.
This form, with sterile
tips of spike, very rare,
growing with normal
form #36167.

Sept. n Battle Creek.

near Gray's Corner

Grove of *Taxodium distichum* about 30 m. tall, 4-6 dm. dbh at head of tidewater on creek. Grove some acres in extent, cut by a network of tidal channels 2-4 dm deep. *Taxodium* makes up the dominant layer, but canopy is incomplete.

A second story about 1 m. tall, mostly *Alnus*, *Acacia*. All trees covered to some extent by *Rhus toxicodendron*. Shrub layer 2 m. tall of *Viburnum dentatum*, *Alnus serrulata*, *Rosa palustris*, *Cornus amomum*, *Asimina*.

Herb layer to 1 m. of *Saururus*, *Impatiens biflora*, *Laportea*, *Breckmania Coccinea*, several grasses, *Amphicarpa*, *Aster lateriflorus*, *Itea Parthenocissas*, *Polygonum sagittatum*, *Apium*, *Cuscuta*, *Chelone*.

Vines of *Vitis*, *Lamia*, *Rhus toxicodendron*, *Parthenocissas*.

Below the bridge, the creek is completely without water except for small pools at low tide.

Cypress knees in great abundance. Some which have been cut off at sometime in the past are sending up circles of smaller knees from the edges.

36171 Battle Creek, near Gray's Corner
Taxodium distichum
 abundant in swamps
 at head of tide-water

Oct. Washington D.C. and Falls Church, Va.
 Center of Hurricane Hazel passed directly over Falls Church, moving northward. Gusty registered up to 98 m.p.h. at Washington Airport, on Potomac. Accompanied by 2 inches of rain (at airport). Many trees blown down generally, but especially in vicinity of Capital. Many branches broken off and great quantities of small branches litter streets. At height of storm many chimney swifts seen from Library of Congress 5 floor windows, flying with great exuberance and no apparent purpose.

In Sleepy Hollow, while wind was lashing tree tops little wind was felt at ground level.

In Washington, between 6:20 & 6:30 p.m. a number

tree 20 m. tall

of large plate-glass windows collapsed outward onto the side-walls, probably from differential pressure during the center of the storm.

The barometric pressure, checked with a small aneroid, at Sleepy Hollow ran as follows.

Oct.

8:30 p.m.	29:55
9:30 p.m.	29:5
10:23 p.m.	29:475
10:55 p.m.	29:45

Oct.

7:00 a.m.	29:3
	29:25

8:00 a.m.	29:2
9:00 a.m.	29:15

10:00 a.m.	28:9
1:00 p.m.	28:75

2:00 p.m.	28:7
3:00 p.m.	28:6

4:00 p.m.	28:5
5:30 p.m.	28:35

5:45 p.m.	28:45
-----------	-------

6:30 p.m.	28:55
7:30 p.m.	28:7
8:00 p.m.	28:9
8:30 p.m.	29:05
9:30 p.m.	29:1

Oct.

3:30 a.m.	29:4
12:10 p.m.	29:35

Oct.

10:45 a.m.	29:65
aneroid checked at 10:50 a.m.	
with Wash. airport	
is about 0.25 low.	

86

87

Feb. 6 Bull Run, 5 miles
w.s.w. of Centreville, Fairfax Co.
low shale cliffs

60m.

36172 *Polyodium vulgare* var. *virginianum*.
common

rhizomes creeping just below
surface of soil; only very
slightly sweet when chewed, ~~sotus~~
licorice flavor.

Feb. 6 Thoroughfare Gap,
Bull Run Mts. Fauquier Co.

36173 *Polyodium vulgare* var. *virginianum*.
common on gneiss cliffs
and ledges.

rhizomes forming mat on
sloping surfaces of
rocks, scarcely sweet,
slightly astringent
when chewed; fronds
curling when dry.

Feb. 10 - Potomac River,
just below Great Falls,
above mouth of Difficult Run

600 acre tract of woods
belonging to Potomac Electric
Power Co.

Predominantly mixed
deciduous woods, of
oaks, larch, Liquidambar,
Acer rubrum, etc. with
a scattering of pine,
principally a form
of *Pinus echinata* (?)
with red platy bark
and slender needles in
r.s. Some *P. virginiana*,
occasional *Juniperus*
virginiana. In the
bottom of the Difficult
Run ravine are many
Platanus, *Fagus* on the sides.

Parts of this area seem
to have been burned over
rather seriously recently
and are covered by young
second growth. Much
of it is a rather open
forest of trees up to 3
dm., rarely to even 8 dm.
diameter (an old oak and a pine about 10 dm.).

Skeletons of old chestnut
trees are occasional. Evidence
of an old fire are scattered

even in the best of the forest.

On the main ridge and
especially on the slopes
toward Difficult Run there
is a marked undergrowth
of ericads - *Kalmia*,
Vaccinium, *Hysnia*, etc.
The *Kalmia* in places
forms a continuous layer.
above this and especially
on the Potomac slope where
the ericaceae are absent
or inconspicuous, is a
well developed second
story of *Cornealiana*,
with tree seedlings.

Polystichum is the
commonest fern, at least
the commonest evergreen one,
but *Polypodium* is common
on the rocks, *Asplenium*
platyneuron and *Dryopteris*
marginalis are occasional.
Patches of *Adiantum* and
of *Aruncus* may be
recognized from dried
remains. Mosses are
common on ground and
rocks, lichens also.

The rock is Potomac schist
and crops out on the summit
of hills and forms cliffs
along river and run.

19 vultures seen circling area.

March 10 - flight from Washington to Atlanta
South of Washington past small dam and reservoir of Alexandria Water Co. Reservoir a yellow-brown from silt.

Before reaching Triassic red soil area about 1/2 land is in forest - deciduous but with abundant patches of pine. These patches sometimes sharply angular, sometimes roughly angular, sometimes irregular, but mostly discrete, ~~not usually~~ blending with deciduous woods.

In Triassic area the proportion of forest decreases and generally southward it decreases till after about 15-20 min. flying time perhaps 20-25% is wooded, then slantly down to about 10% abs. This is rough generalization from visual inspection.

Tree fringes of even major rivers here very narrow, perhaps 1 tree wide. Soil becomes locally orange-red at about 25-30 minutes south. Between are patches of

^{yellow} yellowish or buff or ochre colored soil. (Lynchburg)

Here the forests are more mixed, some pine in the deciduous woods, but angular patches of pure pine are prominent and numerous.

South of Lynchburg perhaps 15% wooded, increasing to perhaps 50% a few miles south.

After about 45 minutes forest covered perhaps 60-75% of ground, slantly increasing to ~~up to~~ ^{30%} more near a large river (Dan?)
(Cloudiness now very bad.)

March 10 - flight from Atlanta to Birmingham and Tuscaloosa.

Forest patches in edges of Atlanta range from pure pine through mixed pine and deciduous to pure deciduous. Outside town forest predominates, with pine more common than deciduous, some mixed. Pine patches frequently angular. Much of the forest rather sparse. Soil red or yellow, mostly red, but patchy. Contour cultivation conspicuous in clearings.

Clouds.

30 min. west from Atlanta the country is sparsely wooded, perhaps more deciduous than pine, with small irregular clearings. Soil yellowish with patches of red.

Westward, on low hilly country a sparse mixed forest perhaps 1/3 pine, more locally, few clearings except locally.

West of this, some predominantly cultivated country of patchy red and yellow soil. The patches of wood very sparse

A river with wooded strips along it.

Westward, again, more low wooded hills. Pine patches irregularly angular, obviously, representing old clearings (or fenced out areas?)

West from here country from $\frac{1}{2}$ to $\frac{2}{3}$ cultivated, soil mainly yellow, some red spots. A large and very muddy river lined with trees.

This is apparently where mountains run out. - No! Birmingham? no, Gadsden.

To west the mountains continue or southward. The ranges are low with level crests.

West from Gadsden mainly sparse woods, deciduous or mixed, with angular patches of pine, these certainly from regeneration in clearings. Some cultivation. Soil whitish. A few of deciduous trees beginning to leaf out.

Mountains here mainly really rim-robed plateaus. Tops largely ~~are~~ cultivated. Trend southwestward.

Contour cultivation and semi-terracing conspicuous.

Slopes sparsely wooded, locally gullied, soil red. Several fires burning in mountains. Mostly deciduous, but some dense patches of pine, some mixed.

Southwestward mountains are mainly ridges and hills rather than plateaus, more densely wooded. Level + rolling parts cleared. Soil red & locally yellowish patches. The yellow must be sand - deep at least in spots.

Birmingham in hills rather than mountains. These wooded, mixed pine and deciduous, largely cut up into lots with houses.

The hills fade out to the westward. Outside the city there are some large residence sections and some extensive, very ugly slag heaps. To west low rolling, locally hilly, largely wooded country, cut by many ravines. Mixed woods pine predominating. Cultivation locally, soil yellow + red.

Mainly pine woods westward, same rolling ground cut by ravines. Very little cultivation locally. Deciduous woods locally, especially westward, locally dominant near Tuscaloosa. Here, in valley, cultivation becomes widespread, occupying a large proportion of land.

Mar. 10 near
University, Tuscaloosa

Hedysotis caerulea var. *minima*
corollas between violet and
lavender, reddish centers,
varying from 7 to 13 mm.
across, two sizes apparent
centering around 8 + 12 mm.
Actual corolla tube not exserted.

36174 *Hedysotis caerulea* var.
common in open places
in low grass and herbs

March 11 - east bluffs of
the Black Warrior River,
above Lock 13, 10 miles above
Tuscaloosa, Tuscaloosa Co.

dry wooded shall
bluffs, partly burned
over last year. Mixed
fine and deciduous woods.

Ground cover of *Isopyrum*,
Dentaria, *Trillium*.

36175 *Pinus virginiana*
common, mixed with *P. taeda*.

5 76 *Croton alabamensis*
common but very local

77 *Hydrangea quercifolia*
common in undergrowth

3 78 *Isopyrum*
abundant

corollas violet with somewhat
reddish centers; leaves
slightly thickish.

This bluff is drier than
the surrounding areas
because it is separated
from the adjacent hill by
a deep ravine parallel
to the river, cutting off
ground water from the
hill. Much of the
undergrowth was
killed by the fire, but
herbs abundant and
flowering freely. Trees
not especially thick, but
not killed by fire
small tree 6 m. tall.

shrub 1.5 m. tall, flowers
yellow, staminate and
pistillate on separate racemes.

shrub 2 m. tall, leafless
at this season.

flowers white. roots
with gall-like thickenings.

36 79 *Corydalis flavula*
very local in burned places

3 80 *Eryngium bulbosum*
common

1 81 *Trillium stamineum*
common

2 82 *Trillium procumbens*
common

2 83 *Ranunculus fascicularis*
common

3 84 *Poa cuspidata*?
rare & local

2 85 *Hydrangea quercifolia*
common in undergrowth

2 86 *Erythronium rostratum*
abundant on steep slope,
forming dense beds.

F 87 *Dentaria heterophylla*
common

1 88 *Hedysarum caeruleum* var. *minor*
very local in open places

4 89 *Acer nigrum* var. *leucodermis*
local on brow of bluff

saff orange; flowers yellow.
flowers pale lavender;
fruit immature
petals very dark maroon
purple; leaves variegated
with gray, lower part
of stem maroon.

- petals erect, deep maroon;
leaves ~~not~~ variegated
with gray, leaves at
ground level.

- roots fleshy; petals
glossy, bright yellow.
loosely tufted.

leafless except for tips
of ~~the~~ sucker sprouts,
bark exfoliating, shrub 2-3
m. tall.

- leaves mottled bronze and
gray-green; flowers yellow
within, not spotted, held
horizontally or ~~the~~ somewhat
up tilted. petals auriculate.

- rhizome horizontal, deeply
buried, flowers purplish white.
flowers varying from violet
to almost white, center
and tube somewhat reddish,
limb varied in breadth.

small twisted shrubby tree
3 m. tall, flowers pale
green, ~~the~~ corolla closed but
stamens long exerted.

36190 *Hypericum aureum*
var. on brow of bluff

3 91 *Ranunculus harveyi*
common locally in ~~thin~~
thin pine woods on slope

2 92 *Aesculus pavia*
common in undergrowth

1 93 *Cheilanthes lanosa*
local in rocky spots

2 94 *Dentaria multifida*
common locally in thin
pine woods on slope

1 95 *Hedysarum caeruleum* var. *minima*
local in small opening
in woods.

This should
be on page 112-103

Sparsely wooded, partly
open flood-plain and
larches along river. The
flood plain is about 4-5
m. above water level.
Beavers have been active
along the bank. Many
trees are gnawed part
way through, some enough
so they have fallen. The
chips are so large they
look like axe chips, but
the tooth marks are
smaller than expected for

shrub 1 m. tall.

petals pale yellow.

shrub 1 m. tall; flowers
pale brick red (others
seen deeper red), very few
in bloom yet.

dense clumps, grande
mostly erect.

flowers white. Rhizome
either of one broadly fusiform
joint or of several such loosely
attached.

flowers violet, varied in
size; plants mostly with
immature fruit.

a beaver. At one point
is a slide into the
water down the steep
bank, obviously smoothed
and rounded by the
animals' bodies. Several
kinds of trees were gnawed
but de-barking was
not conspicuous except on
a *Leltis*. *Platanus* was
only tasted. No beaver lodges
were seen. The animals
may live in holes in the
banks or elsewhere on the river.

Mar. 12 - highway east from Tuskegee - rolling to low hilly country. The more level portions open, cultivated with trees principally along streams and in low spots. Hilly areas mostly pine-covered. The pine woods badly cut over, open, some areas with thickets of young pine saplings. Mostly *P. taeda*.

Low spots with tall thicket-woods with *Magnolia virginiana* very prominent, along with *Liquidambar* and oaks, some pine. *Magnolia* reaches 25 m. or more tall, leaves unusually large. These woods with very dense lower story, except for patches which are mature, where undergrowth is shaded out. In these the more open patches thin areas characterized by *Arundinaria* the bracke. *Himalax laurifolia* conspicuous. *Quercus* is mainly *nigra*. *Magnolia grandiflora* very sporadic in dryer ravines and thickets.

One pond with *Nyssa aquatica*.

Pinus glabra and *Magnolia grandiflora* occur together in patches of woods. Occasional *Juniperus virginiana*, all rather broad crowns.

Magnolia virginiana on slopes as well as in swamps.

Pinus australis occasional in many sterile places usually low hills or knolls.

Red maple general but not abundant - fruiting.

March 12 - east from
Columbus - Muscogee Co.
Pecan orchards.
A Nyssa swamp.
Tulips just beginning
to bloom.

Much abandoned
cultivated land, some
spars patches of second
growth.

Less older forest here
than in Alabama.

Some outcrops of crystalline
rocks in ravines.

Swamps less common
than in Alabama.

Talbot Co.

Much sparsely wooded
land, mostly abandoned
cult. land. Trees up to 10m.
mostly ~~poor~~ *Pinus taeda*.

Land hills - ^{Bkt. Geneva & City} Talbot
with sparse stand of ^{Co.} *Pinus taeda* and *P. australis*.
Crataegus michauxii,
Quercus catesbeiana. Grasses
mainly *Aristida stricta*
and *Andropogon*.

Phlox subulata

common in sparsely wooded
sand hills.

76196

4

Phlox, *Baptisia lanceolata*,
Lecidea, *Opuntia*, *Linaria*
canadensis common.

Geomys (pocket gopher)
common here. Called "salamanders".
Sand very fine, pale
tan or yellowish.

Crataegus just leafing
out.

Taylor Co. Some peach
orchards east of Butler.
Soil here red, not sandy.
Some pine plantations.
Also pine woods, mixed
P. taeda & *P. australis*.

~~Macchia~~ over
East of this more sand hill,
similar to those west of
Butler. Then flat
gray-brown or brown-gray soil.
cultivated land.
Country generally open.
Small slash pine plantings.

Generally in all of
this country *Melia azederach*,
umbrella tree, to be seen
scattered here and there. fruit
conspicuous, no leaves yet.

Diffusely decumbent.
corolla variable in color
from lavender to bright magenta,
and in shape of terminal lobes
and in width.

March 12 - Old Creek Agency,Flint River, 6 mi. s.w. of

Roberta

Bottom lands ^{bluffs} and ravines
in low alluvial hills along
east side of river.

36197 *Hedysotis caerulea* var. *caerulea*
very rare in pasture and under trees
(growing with var. *minor*)

1 98 *Polyodium polypodioides*
epiphytic on bases of trees

1 99 *Viola*
occasional on moist
banks of small stream

36200 4 *Vaccinium elliottii*
occasional in ravine
along stream

2 01 *Persea barbunica*
rare in thicket along stream

2 02 *Prunus umbellata*
rare in thicket along stream

2 03 *Corylus*
common on sides of ravine

2 04 *Viola blanda*
occasional on ^{bank} ~~edges~~ of
stream ^{well} above water

1 05 *Hedysotis caerulea* var. *minor*
heavily grazed pasture,
very common.

1 06 *Helenium filifolium*
common in heavily grazed
pasture.

flowers very pale lavender,
center and tube yellow.flowers white, lower
petal with black lines,
two lateral ones bearded at base
shrub 2 m. tall,
corolla white.tree 8 m. tall, sterile,
leaves aromatic when crushed.
small tree 4 m. tall, flowers
white.flowers greenish, scarcely
bronzed.flowers white, lower
petal with black lines.flowers violet with
reddish center, tube salmon.
little variation except in
size of flowers. No evidence
found of floral dimorphism.rosettes collected to
show early stages (very
bitter when chewed) (see Harker paper)

110

1955 Georgia

36207 *Erythronium*
abundant locally on slopes and terraces along streams, especially on north facing slopes

1 08 *Magnolia virginiana* common in woods along streams.

3 09 *Carpinus caroliniana* common along stream

1 10 *Asplenium platyneuron* common on steep slopes and banks.

1 11 *Isoetes* rare in small stream in loose earth bottom

1 12 *Hedychium caeruleum* var. *minor* common in bar dried mud around bridge construction

1 13 *Hedychium caeruleum* var. *minor* common in pasture

1 14 *Myosurus* rare in pasture

1 15 *Trillium sessile?* common locally on steep wooded slope above bottom land

Crawford Co.

111

bulb deeply buried; leaves mottled bronze and bluish green; flowers all pointing downward, petals not auriculate, yellow with elongate dark spots. anthers white to purple; fruit pyriform, ~~so~~ very rounded at apex, nodding.

tree 8 m. tall, leaves aromatic, white beneath; sterile.

small tree 5 m. tall, trunk 12 cm. thick; catkins pendent.

flowers violet, centers reddish, tube salmon.

flowers violet, centers reddish, tube salmon, varying only in size of flower; no evidence of dimorphism.

rhizome compressed dorsoventrally, leaves only slightly mottled, petals erect deep maroon, stem reddish maroon.

36216 Phlox

rare on steep wooded slope
above river bottom land

4 17 Vicia

very common on slopes and
level wooded bottom land.

3 18 Acer negundo L.

occasional on stream bank

2 19 Celtis

occasional on bottom land

see pp. 102-103 - notes
written there by mistake,
but no plant notes - just
those on beaver activity.

In this area at least
one place the crystalline
bedrock is exposed
along the river. The
overlying beds are
Cretaceous.

Mar. 13 - west from Roberta
cut over pine forest -
young ~~P.~~ P. taeda with
some deciduous trees,
oaks, Liquidambar, tulip
beginning to leaf out.

Crystalline rocks with
a mantle of red coastal
plain sediments. Little
present cultivation, many

~~no~~ flowers reddish magenta.

flowers pale lavender;
fruit immature.

small tree 5 m. tall;
stems green; flowers
pendent, greenish.

large tree, 12 m. tall,
3 dm. thick, ^{freshly} cut down
by beavers, partly debarked.

abandoned clearings over-
grown by saplings of pine
and other trees.

No Magnolia virginiana
in swamps here.

Much cutting of pine
for pulpwood. Debris left
lying on ground.

Some Pinus echinata with
P. taeda on bedrock area s. of
Flint R.

Mar. 13 From Flint R. to Talbotton
all Piedmont mixed
forest, locally varied to
pine or pure hardwood.
Very little cleared land.

Alabama

Mar. 13 - Columbus to Opelika
largely cultivated. See corn,
pecan orchards, etc.
Many abandoned fields,
invaded by pines.
Near Opelika in piedmont
country largely wooded.
mostly pine. Some appears
planted.

West from Auburn - piedmont
much cultivated land -
fields, pecan orchards, - some
swamps, thickets, patches of
woods, less pine than usual.
Lonicera japonica prominent
in thickets.

Pecan trees characterized
by long straight ascending
branches mostly originating
at ~~so~~ or near one point - possibly
result of grafting. Trees thus
V shaped, crowns may or may
not touch at tops.

West of Tallahassee all coastal
plain *Magnolia virginiana*
becomes abundant again in

swamps. Pine forest more
prominent, some *P. australis*
latter formerly much more
abundant. Mostly *P. taeda*,
some *P. echinata*.

Mar. 13

1 mi W. of Wetumpka, Elmore Co.

30270

Vicia grandiflora
roadside

5

Mar. 13 - Whitewater Creek,
10 mi. n.w. Prattville
roadside21 *Thlaspi arvense*
thriving colony22 *Hedysotis caerulea* var. minor
occasional23 *Hedysotis caerulea* var. minor
rare

remains of old beaver dam
in large mill-pond.
Nuphar advena (?) abundant
in pond, also a large
Sphraganium. Several sp.
of *Juncus* incl. *J. scirpoides*
and *J. effusus* around edge.

Mar 13 - 8 mi. ^{SE} of Mapleville
Chilton Co.boggy edge of swamp,
with brake of *Aquaticaria*24 *Smilax*
common,25 *Pyrus*

in edge of brake

26 *Vaccinium virginatum*
commonflowers yellow, becoming
pale, tending pinkish.

erect, flowers white

fls. violet.

fls. white.

Opuntia common in
semi open flat ground
nearby. Thickets with
deciduous trees, *Tilia*, *Fraxinus*,
Juniperus virginiana, etc.

hilly wooded country,
pines abundant, some
P. australis (formerly dominant)
boggy places, marked by *Aquaticaria*, in head
of ravines.
woody vine, lower stems
2 cm. thick with stout prickles;
mature and half grown
fruits.

shrub 2 m. tall, flowers
white.shrub 2 m. tall, corolla
— dull white.

36227 *Mycica cecropia*

edge of swamp.

28 *Hedysotis caerulea* var. *caerulea*
common along roadsides
29 *Hedysotis caerulea* var. *minor*
occasional along roadsides

same - roadsides

P. M. Harper thinks that the original forest in the central Alabama and Georgia coastal plain was largely pine forest, much of it, at least on poor sites, longleaf pine. This has been cut over repeatedly, cleared in places, with *P. taeda* gaining ascendancy.

Mature trees of *P. austriacus* are not susceptible to fire, which is an essential feature in management of this species. The normal crown shape of this tree is round at top, A-shape, very symmetrical.

The route taken on this trip across the two states is about on the fall line, sometimes north, sometimes south of it. The contact between piedmont and

stunted shrubs 4-5 dm.

- tall

- flowers white to pale

- lavender, center yellow.

- flowers violet, reddish center.

coastal plain is one of interpinching, and with the sediments thinly overlying the crystalline rocks except where the latter are exposed by streams or road cuts. The coastal plain is higher than the southern edge of the piedmont.

The present general aspect of this country is largely that of rather degraded forest, with clearings, old fields, young growth, sparse stands of older trees with dense or sparse young growth. Occasional patches of fairly good forest are scattered here and there.

May 14 5 mi. s. Tuscaloosa
slough on river flood plain,
with mixed swamp forest.
standing water.

36230 *Rorippa*
small colony in edge of
water, sunny spot.

~~30a *Gossypium glabrum*~~

~~cinnamon~~
May 14 - Tuscaloosa, University campus

30a *Neviusia*
cultivated

May 14 5 mi. s.s. of ~~Ralph~~

~~savanna~~ wooded ravine
in sandy unconsolidated
sediments. Woods mainly
broadleaved deciduous trees.

31 *Asarum arifolium*
occasional on slopes in wood

32 *Carex pensylvanica*
occasional on slopes in wood

33 *Hedysotis caerulea* v. *minima*
in full sun on ^{newly} disturbed
soil

May 14 bet. Allison and Boligee,

8 mi. s.w. of Entau, Greene Co.
low patch of deciduous
woods. Black soil on
chalk formation.

34 *Thalictrum debile*
dense patches in woods

35 *Thalictrum debile*
dense patches in woods

35a

erect; flowers inconspicuous,
dull yellow.

shrub 2 m. tall; flowers with
white stamens.

leaves variegated; flowers
uncinate, neck narrow, 3-lobed,
tufted

flowers violet (one plant
with them pale lavender), throat
reddish, tube salmon, not dimorphic.

Aesculus glabra
common in

♂ flowers purplish green. anthers orange

♀ flowers purplish.

March 14 - near Eps

Lumter Co.

On chalk barrens -
thin ~~soil~~ soil, fine
and cracking when dry,
underlain by chalk.

36-36 *Anemone caroliniana*
" very common

2 37 *Juniperus virginiana*
very common

2 38 *Juniperus virginiana*
very common

2 39 *Acer negundo* var. *leucoderme*
rare

2 40 *Draba cuneifolia*
common

1 41 *Draba brachycarpa*
common

3 42 *Arenaria patula*
very common

4 43 *Ranunculus*
locally very common

Same - chalk bluffs along
Tombigbee River

4 44 *Acer negundo* var. *leucoderme*
on steep chalk bluffs

leaves fleshy, dull green;
flowers from white to
violet, petals readily
caducous.

low spreading shrub.
small irregularly
shaped tree (others seen
varying from flat-topped
to whip-topped but
all rather broad-crowned.)
small straight tree,
5 m. tall, bracts
rose, flowers yellow-
green.
flowers white.

spreading, green,
petals white, notched
roots not thickened.
leaves bright green,
sub-fleshy; petals bright
yellow, glossy above,
narrowly elliptic.

straight tree about 12 m. tall,
flowers yellow-green.

The "Black Belt", in Greene and Sumter counties, extending from Enton to Livingston (and westward) is an area of dark soils in places almost black, underlain by chalk.

The depth of soil varies from nothing to at least several feet, the deeper and blacker areas being in low places.

This country is mostly open and pastured, with rows of trees along fences, small patches of woods on knolls, and scattered to dense stands of *Juniperus virginiana*.

The soil is supposed to be richer than the other coastal plain soils and to have been used for cotton formerly. Some areas seem too thin for successful cultivation.

These are called "chalk barnens" and are covered by an ~~wooded~~ irregular woodland of *Juniperus*. This has been thinned very drastically by cutting for fence posts till it is in most parts quite open. The soil here is little more than fine

chalk powder, light gray, hard and cracked in a finely polygonal pattern (5-15 cm. diam.).

On it grow relatively few species, in addition to those collected (p. 122)-

Nothoscordum is abundant locally. *Rhus canadensis* was seen, but rare.

It is not at all certain how much of this belt was open in prehistoric time, but there probably were open areas, acc. R. M. Parker. He regards it as prairie and thinks that prairie plants characterize it - but that they are now scarce from over-grazing.

Lying in this area are hills of various sizes made up of deposits of red soil. Their origin is obscure. They were used as homesites by settlers and plantation owners, because they contain softer water than the surrounding chalk, also, raised. They are not so hot and sticky and may have less mosquito. These vary from small mounds a few feet high, to large hills a hundred or less feet.

May 15 - flight Tuscaloosa to Birmingham - large hilly area is mainly pine woods with some deciduous trees generally scattered through it, lawns mostly in deciduous forest, occasionally ~~other~~ elsewhere varying to predominantly deciduous. Some noticeable pine scars. Cultivated patches more conspicuous near Tuscaloosa and Birmingham.

In northeastern outskirts of Birmingham is a large pond with a belt of trees, Taxodium or Nyssa or both, growing in the water, the belt following the shore but some yards from it, not extending into the deeper parts of the pond.

from Birmingham to Gadsden.

First large reservoir greenish, not especially muddy. Second (Inland L.?) very muddy - a greenish dirty milky color. This one seems to lie in a very complicated valley within the large plateau bounded by river rock.

Tops of these plateaus largely cultivated but with patches of woods, wooded ravines, patches of rocky, sparse cut over pineland. The pattern of clearing very irregular. Mixed woods, largely deciduous, on slopes below river rock.

Streams near Gadsden lined with one row of deciduous trees on each bank.

128

1955 Virginia

April 2 - Potomac River below Great Falls

High cliffs along Potomac -
crystalline rocks.*Polyodium vulgare* var. *virginianum**Dryopteris marginalis**Asplenium platyneuron**Polystichum acrostichoides**Woodsia* ?*Veronica**Phlox subulata**Saxifraga virginica**Vaccinium vacillans**Lamiastrum glaucum**Juniperus virginiana**Pinus virginiana**Carya**Dactylis glomerata**Lamiastrum rotundifolium**Andropogon virginicus**Andromeda* ?*Hypericum* (shrubby)*Rosa carolina**Achillea millefolium**Ronicera japonica**Viburnum prunifolium*36245 Polyodium vulgare var. virginianum.
common on rock cliffs4 46 Veronica
common on rock cliffs4 47 *Dirca palustris*
common locally in
thin woods on terrace
above river.

Fairfax Co.

129

level terrace below
steep slope, above cliffs,
mostly wooded with
young trees.In this sparse wood
Dirca palustris is common,
also *Hanguinaria*, *Hepatica*,
Anemoneella, *Draba nemorosa*,(herbarium sent to Miss Shivas,
Leeds, for chromosome counting)
prostrate, flower bluish
lavendershrub 1 m. tall, bark very
tough, strong smelling
when broken; flowers yellow,
pendent.

April 9 - 3½ mi. E. of Capitol Heights

36248 *Erythronium*

very common in flat
flood plain densely
wooded with *Liriodendron*
and other trees (but all
large trees recently logged out)
heavy silty clay soil.

(this colony completely
sterile)

slightly dimorphic, pollen dull light brown

49 *Erythronium*

~~very common~~ (same)

(for fruits see #36259)

Anthers deep purple, pollen
reddish brown.

Anne Arundel Co., Prince George's Co. 131

bulbs buried deeply,
leaves ~~all~~ bronze purple
with large spots of
blue-green; flowers
mostly horizontal to
nodding; ~~inner~~ segments
yellow, outer ones
bronze outside, liberally
spotted with maroon
toward base inside, spots
linear, inner segments
slightly involute auriculate at
base, anthers dull ochre
yellow with purple lid,
connective & style ~~as~~ emerging
abruptly from ovary,
clavate, 3 sided, apex
subtruncate, stigmatic,
shortly 3-lobed ♀

bulbs buried deeply, leaves
~~glossy~~ bronze purple, spotted
with blue green; flowers
mostly horizontal to
nodding, clear bright
yellow, outer segments
only slightly bronzed outside,
all segments with only
very few linear maroon
dots inside on lower half,
inner segments strongly involute
auriculate at base, (style as in 36248)

132

~ 1955 Maryland

36248 *Erythronium*
same, but rare

51

abundant on ~~decaying~~ decaying root
log in stream ravine

Apr. 9 - 6 mi. e. of Capitol
Heights

52 *Erythronium* wooded
common on flood plain
but flowering only on
silt ~~soil~~¹² of banks
above stream, very
deeply rooted.

Prince Georges Co.

133

same as 36248 but outer
segments more bronzed
inner with almost
no dots, anthers strongly
dimorphic, smaller
one darker purple, larger
maroon, smaller
opposite outer segments.

^{subglossy}

waves hairy purple, dull
but with anastomosing
blue-green spots; flower
horizontal to nodding,
yellow, outer segments
bronzed outside, all
speckled with maroon
inside near base, spots
more or less linear, inner
segments strongly
involute auriculate
at base; anthers flesh
purple or maroon.
dimorphic to varying
degree, pollen reddish brown
shorter opposite outer segments,
style as in 36248

April 9 - Along Tripp's Run,
Ravenwood
second growth woods,
largely *Liriodendron*, in
bottom land, sand, silt soil.

36253 *Erythronium*
small colonies

54 *Erythronium*
small colonies

leaves subglossy, bronze
purple with anastomosing
blue-green spots; flowers
nodding slightly below
horizontal, segments
recurved, bright yellow,
outer ones bronze outside
all ~~with~~ speckled with
maroon linear dots near
base inside, inner ~~yellow~~
& involute auriculate at
base; anthers ~~dark~~ dark
purple, somewhat dimorphic
shorter ones opposite outer
segments, pollen reddish
brown, style abruptly
emerging from the ovary,
clavate, 3 sided above, the
sides grooved, apex truncate,
stigmatic, $\frac{3}{2}$ subequal with or
very slightly exceeding anthers.

as in 36253 but speckling
on inside of segments less
strong, auriculation stronger,
~~style~~ anthers yellow,
only slightly dimorphic,
pollen yellow, style
exceeding anthers by 7 mm +
bronze on outer segments showing
through on inside.

136 1955 Virginia

36255 *Lonicera japonica*

56 *Erythronium*
small colonies

These *Erythroniums*
grow together. It is
possible that the
dimorphism may
grow less with the
dehiscence and shrinking
of the ~~the~~ longer anthers.
There seems to be much
variation in the
degree of dimorphism
and in the length of
style. The style may
possibly elongate with
age.

57 *Erythronium*
small colonies

Fairfax Co.

137

same as #36253 but
anthers even more
dimorphic. Those
opposite outer segments
already dehisced, shorter
than style, & those opp.
inner much larger,
maroon, not dehisced,
exceeding style as much,
as others are shorter.

as in #36254, but ~~the~~
segments scarcely apched
within, & anthers
more or less dimorphic
(one flower as extreme as
in 36256 and same arrange-
ment, style only slightly
exceeding anthers or not shorter
in flower with dimorphic anthers).

138 1955 Virginia

36258 *Brythronium*
large colony

139

mixed colony showing both purple and yellow anthers (~~not in same flower~~) varying degrees of dimorphism, varying style lengths from slightly shorter to several mm. longer than anthers (this does not seem to be a matter of age as some with all anthers debucced and rather shriveled have the styles still shorter than anthers.), these flowers only agreeing in lacking or almost lacking any speckling inside at base of segments. Inner segments involute annulate at base but some only very slightly so. One flower seen with one purple and 5 yellow anthers, three yellow ones sterile or almost so. Bronze showing through outer segments.

Apr. 16

36259 *Erythronium*
same as #36249

fruit more or less erect,
somewhat triangular
in cross section, oblong,
narrowed at base,
at only a slight angle
with ~~the~~ arching peduncle

Virginia

Apr. 17 - Sleepy Hollow, Tripp's
Run, 1½ mi. S. of Falls Church
sparsely wooded flood
plain of stream

60 *Erythronium*
same as 36257

fruits at slight angle to
arching peduncle; somewhat
triangular in cross
section, oblong, narrowed
at base, at a very slight
angle with peduncle

61 *Erythronium*
same as 36253

62 *Erythronium*
same as 36256

fruits on ascending
pedicels, slightly
triangular in cross section
shortly elliptic, at ~~about~~ ^{about} 45°
angle to peduncle.

63 *Erythronium*
same as *36258

any or no angle with peduncle, peduncle
straight or strongly upcurved at apex.

peduncles from almost erect to
arching till touching ground
fruit slightly triangular in
cross sec. ellipsoid-oblong &
rarely ovoid, at scarcely

April 22 - Railroad from Alexandria to Richmond
leaving Alexandria -

Deciduous trees varying in degree of leafing out from scarcely started (*Liquidambar*) to well started (*oak*) to half or more (*Liriodendron*) to fully leafed out (~~*Acer*~~ ^{undert, to many, possibly planted trees} *acer*, *lalin*, *fagus*)

Cornus florida variable, full flower to just opening, side by side, abundant.

Patches of *Pinus virginiana* here and there, but forest is mostly deciduous, dominant varying locally.

Definitely more advanced in foliation even just south of Ocegan Creek.

In some abandoned fields growing up principally to pine. But generally less pine and what there are becoming more and more *P. rigida*.

Beyond Quantico trees, esp. *Liriodendron*, ever further out. *Roniera*

japonica abundant. Where the ~~sou~~ leaves the Potomac *Pinus virginiana* again becomes locally abundant, some *P. echinata*. The general aspect is of much less leafing out from ~~now~~ to Fredericksburg. Beyond there things are greener. *Rhododendron nudiflorum* in full bloom just beyond Fredericksburg. *Cornus* almost past best flowering, half leafed out.

Pines become more and more abundant, mostly *P. virginiana*. Somewhat farther south *P. taeda* becomes the most abundant. As *Liquidambar* becomes more abundant the forest presents an earlier spring aspect, because of its the slowness in leafing out.

Williamsburg - *Cornus florida* and *Cercis* ~~is~~ definitely past their prime here. Trees well leafed out, but leaves on many not full grown.

April 22 - 3 miles n. of Suffolk
scattered along
roadside in low second-
growth woods,

36244 *Rhododendron atlanticum*

65 *Rhododendron atlanticum* × *mudiflorum*

36264 & 36265 show
every degree of intergrada-
tion in all characters.

36244 represents a rather
common extreme, 36265
the plants which show
some *R. mudiflorum*.

shrubs 3-4 dm. tall,
flowers white, stamens
white, style rose, odor
pleasant more or less
like cloves.

- shrubs 3-4 dm. tall corolla
with pink or reddish tube,
limb pale pink to whitish,
inside, stamens and
styles pink, odor with
some clove component mixed
with musky component.

April 23 - ~~most of~~
Juniper with first east
of Buffolis, ~~annual~~ swampy,
low swampy woods
along road.

36246 *Ulmus alata* Michx.
common in

1 67 *Quercus phellos*
& occasional in

2 68 *Rhododendron atlanticum* f. *erectum*
rare in edge of

2 69 *Linnaea borealis*
occasional in edge of

2 70 *Morus rubra* L.
occasional in

1 71 *Asplenium platyneuron*
epiphytic on lower
trunks of *Taxodium*
along ditch in

2 72 *Lemna trisulca*
along bank of ditch in

3 73 *Vaccinium Gaylussaci* var.
rare in edge of

mass collection of twigs
from seedlings and
sprouts 1-2 m. tall
to show variation in
coloriness and leaf shape
— tree 10 m. tall.

— small tree 5 ~~6~~ m. tall,
sterile, to show aestivation
of leaves.

— shrub 4 dm. tall, flowers
mildly fragrant,
pink outside, white
within, stamens
white, style pinkish.
shrub 1 m. tall.

tree 8 m. tall, leaves
partly developed.

shrub, m. tall; flowers
white, strongly fragrant.
low bushy, 3 dm. tall,
stems green; flowers pinkish
white.

148 1955 Virginia

" April 23 - *Juncus tenuis*
 4-4.5 mi. in from head.
Dixmal swamp
 trees second growth,
 swamp forest
 36274 *Pyrus aquatica*
 along ditch bank in
 3 75 *Ilex coriacea*
 common in dense
 scrub layer in sparse
 2 76 *Lyonia ligustrina*
 common along ditch in
 2 77 *Leucothoe racemosa*
 common along ditch in
 3 78 *Clethra alnifolia*
 common in edge of
 3 79 *Ilex coriacea* &
 common along ditch in
 3 80 *Lyonia lucida?*
 common in edge of
 3 81 *Vaccinium*
 common in scrub
 2 82 *Lyonia?*
 one of dominants in
 3 83 *Vaccinium*
 common in
 84 ~~Rhododendron~~

Nassau Co.

149

shrub, flowers white.
 shrub 2 m. tall,
 bud only.
 shrub 1 m. tall.
 shrub 1 m. tall,
 flowers white, pendent.
 shrub 1 m. tall.
 shrub 1 m. tall
 shrub 3-3.5 m. tall, buds red.
 shrub 3⁴ m. tall,
 fruit immature.
 shrub 4 m. tall, buds reddish.
 shrub 3 m. tall,
 corollas white.

April 23 - head of
Washington Ditch, Dismal Swamp
south of Suffolk

36284 Rhododendron atlanticum f. cuneatum.
3 small colony in edge
of swampy woods

April 23 - Washington
Ditch, 1-2 miles into
Dismal Swamp, S. of Suffolk

2 83 swamp forest
Cardamine pensylvanica var. buttoniana
in standing water

2 84 Juniperus communis
Occasional in

2 85 Ranunculus pusillus
rare in standing water

2 86 Cardamine parviflora var. aeniuola
pioneer on sandy silt
fill on ditch bank

1 87 Viola papilionacea
pioneer on bare sand + silt
ditch bank

2 88 Clematis crispa
pioneer on bare sandy
silt ditch bank

1 89 Callitrichis
pioneer on bare sandy
silt ditch banks

2 90 Viburnum nudum
occasional along ditch
and in sparse forest

1 91 Gratiola virginiana
in wet swamp and on
open dry embankment

shrub 0.5 m. tall
flowers white, only very
slightly pinkish outside,
scarcely fragrant.

stem succulent,
flowers white.
dense clumps

stem succulent
erect.

flowers pale lavender
and light violet

strawling branched
vine, flower magenta.

prostrate, forming
tiny mats.

shrub, bud only.

flowers white, yellowish
in center.

36294 *Woodwardia virginica* (L.) Lm.
on hummock of peat
in shade

1 95 *Proserpinaca palustris*
in shallow water.

2 96 local ^{in wet} opening in
Carex alata T. & G.

2 97 epiphytic on rotten log
Glyceria pallida (For.) Trin.
local but dense colony
in wet open place

2 99 *Populus heterophylla* L.?
occasional

36300 *Salix*
common in more or less
open wet places

3 01 *Salix*
same

2 02 *Ranunculus pusillus*
occasional on bare sandy
silt ditch bank

3 03 *Hottonia inflata*
common in semi-shaded

3 04 *Carex incompta* Bickn.
common in muddy
open places.

1 05 *Polypodium polypodioides*
on fallen tree trunk

2 06 *euonymus virginicus*
occasional in ~~edge of~~
1 07 *Carex howei* Mack.
epiphytic on base of tree trunk

rhizome slightly
buried, horizontal:
sterile, serrate leaves
emarginated

caespitose

small tree, leaves
half expanded, sterile
large shrub 2.5 m. tall.

small tree 8 m. tall.
flowers yellowish

rosette of floating
leaves with erect inflated
inflorescence, corolla white.
caespitose

shrub 1 m. tall

154

1955 Virginia

36308 Callitrichaceae

in standing water

7 27 Cardamine pensylvanica

in standing water in shade

1 10 Clematis crispa

in sparse place in
forest2 11 Viola primulifolia
very local in path in peat6 12 Ericothoe axillaris
common forming
patches in forest
with little undergrowth.

Jerico ditch was dug
many years ago, probably
in Washington time (He
was in charge of digging
one of the ditches). Has been
dredged out within last
several years. Now a
ditch is being dug in
from the northeast to intersect
it. Perhaps another also.

Jerico ditch starts at
Buffolls, north of railroad
tracks, but this part is in
disuse. It apparently
drains into the Nansemond
River. From beyond the railroad
drainage is toward Lake
Drummond. Upper end is in
partially cleared country

Nansemond S

155

floating leaves broad.

nest, flowers white.

* rhizome slender,
horizontal; flower white.
— very weak shrub,
branched at base,
* semi-procumbent;
flowers white.

with areas of swamp
forest and of dense Acer
thicket about 15 m. tall.
Boundary between forest
and thicket is sudden,
at least on road in to ditch.

Along the ditch is a dense
acer rubrum forest about
15 m. tall, trees small,
with much Persea borbonica
and Magnolia virginiana.
There has been much
cutting on the east side of
the ditch. Near the dam
there ~~broadleaf~~ is a scattered
stand of Chamaecyparis.

From here on this
forest becomes lower
and poorer. At 2 1/2 miles

Apr. 24 - Jerico Ditch, Dismal
Swamps, 1 mi. north of
Lake Drummond, s.e. of Suffolk,
Amurina tecta

36313

Common on open ditch
bank at edge of Thicket
(as well as being an
important component
of understory in forest
and generally abundant
wet ground)

from where the road joins
the ditch it becomes a
low scrubby thicket.
A mile or so farther in it
is a rather open forest
of Acer and some Chamaecyparis
^{1-10 m. apart}
15-20 m. tall, trees 15-20 cm.
diam. A second story
5-8 m. tall of Persea merging
with a tangled undergrowth
of Vaccinium and other
Ericads and Ilex coriacea.
Tangled with Smilax
laevifolia. There are no
herbs at all on the ground,
which is covered by a thick

erect close clumps ^{1-2 m. tall},
connected by buried
rhizomes. ~~only this small~~
~~group of clumps~~ seen flowering.
~~plant only~~ culm sheaths from
erect unbranched
whip-like shoots
without leaves or only
several at tops, blades
of culm sheaths caducous,
~~old plant~~ part of plant with
purplish coloration.

hummocky layer of
duff, litter, rotten wood,
etc. lying on top of the
waterlogged peat.

Along a track running
northeastward from the ditch
for half a mile or more the
tree layer becomes lower
and sparser, at first
becoming a solid layer
too close to walk through,
of Ericaceae, Ilex coriacea,
Persea, and Smilax, with
3-5 m. tall, with sparsely
set saplings of Nyssa
and Acer up to 10 m. tall.

with stem, 5-7 cm. thick.
Farther in the sapling
drop out almost entirely though a few
Chamaecyparis appear.
Persea more common here.
some magnolias.

At the end of the cut
tracks is a grove, some
acres in extent, of close
set trees, about 1-2 (3) m.
apart, about $1\frac{1}{2}$ to $\frac{2}{3}$ Acer
rubrum, the rest *Chamaecyparis*
thyoides, a little *Nyssa*,
~~the Acer~~ 20-30 m. tall.
The Acer perhaps 15-20 cm.
thick, the *Chamaecyparis*
up to 30 cm. The track
is for logging out the
Chamaecyparis - an
estimated million board
feet of it. Estimate seems
large to me, if only larger
trees are counted. There
are no herbs or ferns
on the ground. Some
epiphytic mosses and
lichens on tree but
on most trees only a very
thin layer, thinner on
the cedar than on Acer
because of shredding
bark.

Another road runs
eastward from where
~~road~~ entrance road
joins ditch to where
new ditch is being
dug. This ditch will
follow road. This is
through a thicket of
Acer rubrum, *Ilex opaca*
and *Chamaecyparis*,
5-10 m. tall, 3-7 cm. thick.
This extremely dense,
tangled with *Limnophila*
laevis. No herb
layer. Old stumps
in this where it is being
cleared for the ditch show
signs of fire a long
time ago. A few scattered
old tall trees.

From the track
running in to the cedar
grove or down the ditch
to the ~~grape~~ angle
where it turns south
the same rather open
forest with thick
ericaceous undergrowth
continues becoming, near
the angle, somewhat taller
on the east side, but on
west replaced by a dense
thicket with scattered
trees, including occasional

pine and chamaecyparis. This extends in for a half mile or more, with the open forest on the east side becoming denser, more dominated by Acer. On west side a sudden change to pure Acer forest which continues a mile or more on both sides. This has almost a full canopy and is rather open beneath except for tangles of Smilax and Arundinaria. Sphagnum covers ground locally but there are scarcely any herbs.

Southward there is a gradual change by increase of Nyssa till it becomes dominant instead of acer. There is still some acer, some Liquidambar. ~~and~~ the ground at same time becomes wetter. There is a loose undergrowth of Persea, Vaccinium, Arundinaria and Smilax. Ledges on the rotten logs and hummocks.

This finally becomes a typical Nyssa-Taxodium

swamp, mostly Nyssa with large trees. Many of these seem rather defective. The enlarged bases of the Nyssa are very characteristic and show up even in the sapling stage. The Acer has a wide system of branching horizontal planke-buttress roots.

About 2-2.5 miles south of the angle in the ditch the Nyssa swamp abruptly give way to a stretch of thicket, doubtless the result of a fire. This is about a mile across. It is a mixture of saplings of Nyssa and acer. It is quite thick but possible to walk through except for frequent Smilax and Arundinaria tangles. There is some Sphagnum here, and Mitchella and mosses on tree bases, logs, and stumps.

Toward the lake this gradually gets taller. The last half mile or

so near Lake Drummond is a rather open Acer forest with some Nyssa. This is wet underfoot but without standing water, rather tangled with Persicaria, etc. Some small Asimina saplings noticed here. The ground layer is mostly Rhiz. toxicodendron, with some ferns. The Acer trees here are heavily parasitized by Phoradendron, in contrast to those farther away from the lake. In somewhat open place Saururus is

immediately adjacent to the lake is a swamp of Taxodium and Nyssa with standing water between the trees.

In all of these types excepting the pure thickets there are many trees down or partially fallen. Much of this damage seems directly attributable to the recent hurricane "Hazel". Some of the ~~roots~~ tipped up root systems are several m. across, leaving corresponding water-filled holes.

Rotten logs are an almost constant feature of all of the vegetation types in the swamp and must be the raw material of much of the peat. The upper layers of peat are also filled with roots.

The water in Jerry's ditch is dark brown, looking even in a cup like moderately strong tea. In taste the water is slightly bitter, slightly acid, and astringent, but not disagreeable.

At the mouth of ~~Jerry~~ the ditch, ~~south~~ at Lake Drummond, there is a dam with gates for controlling the level of the water, which is several feet higher than in the lake. There is little difference between the water level in the ditch and the level of the ground on the west side, all along. The high filled bank with the road is on the east. The road would be passable to jeeps, at least, in the lake.

at the mouth is a small house with a pie. Fishermen were ever catching a few small catfish.

Along this ditch we saw a small deer, several wood ducks, a green heron, two kingfishers, a hawk and several smaller birds. A number of woodpeckers was commonly seen and their tapping could be heard occasionally. Bird calls frequent even in the middle of the day. A large black snake and a large king snake were seen, as well as a small *Hyla*. A number of painted terrapins were seen in the water of the ditch and one small one on land. A flying squirrel was seen, caught by a cocker spaniel belonging to Mr. Lynn.

Where the road comes in to the Washington ditch there is a mixture of cultivated land and swamps forest. This forest is a mixture of *Acer rubrum*, *Pinus taeda*, *Liquidambar*, *Fagus*, *Quercus nigra*, *Ulmus*?, ~~Castan~~ a little *Carpinus*, very little *Taxodium*, with undergrowth of *Ilex opaca*, *Smilax rotundifolia*, *Betula*, *scandens*, *Rhus toxicodendron*, *Decumaria barbara*, and a sprawling evergreen ericad (36312) which forms low patches.

Toward this forest rapidly becomes more scrubby.

About 1 km. in there are more large trees, with greater proportion of *Taxodium*, less *Quercus*. Some areas have large pines in some abundance, others more. Here seedlings of *Taxodium* were seen on rotting logs. Ground is wet and spongy.

A cut trail in to the marsh almost immediately gets into a very scrubby growth of *Salix*, *Guercus*, *Liquidambar*, *Taxodium*, *Acer rubrum*, and *Nyssa*. ~~and~~ saplings about 4-5 m. tall very dense. Some scattered very tall slender *Taxodium*. Water table about at surface here. Moss is ~~less~~ abundant on rotting logs. *Juncus* and various other herbs along this trail.

Beyond this, for a km. or so, this sort of thicket continues on the north side of the ditch, becoming sparser. On the ~~south~~ south side is good forest.

Here the level of water in the ditch is 1½-2 feet lower than the surface of the ground, and streams of water and seepage flow abundantly out of the bank on the south side. This water is pale tea colored and very agreeable to the taste.

The forest is a rather open degraded forest with some fairly large trees of *Taxodium*, *Acer*, *Nyssa*, *Guercus nigra*, with smaller *Fraxinus*, *Ulmus*, etc. quite abundant. They stand in water or soupy mud and have either enlarged bases or small buttresses. Many fallen trees form a tangle. *Rhus*, *Toxicodendron* and *Parthenocissus* are common climbing on the trees. Bedges, mosses, etc. are on logs and bases of trees. *Carex*, *Ranunculus*, *Proserpinaca*, *Hottonia*, and *Callitrichis* grow in water or mud, mainly in semi-open places.

In the north side somewhat beyond this is a low open growth of saplings of *Nyssa*, *Fraxinus*, *Taxodium*, *Salix*, much thicker near the ditch, where

Liquidambar, *Populus*
Acer, *Fraxinus nigra* are
 also common with *Arundinaria*
 and both *Solidago rotundifolia*
 and *G. walteri*, *Rubus*
~~sat~~ *Stea*, etc.

Here are patches of open
 marsh with *Carex* few,
 grasses, *Sparganium americanum*,
Rosa palustris,
Rhus toxicodendron, ~~*Lapathum*~~, etc.

In this area are many
 large stumps of sawed
 trees, as well as large trees
 broken at varying heights
 and sending up abundant
 sprouts. There are many
 rotten logs on the ground.
 There are no actual
 evidences of fire here,
 but the landscape
 looks as though fires
 had ~~ever~~ exerted an
 influence on it.

Both species of *Woodwardia*
 are common in the thicker
 growth near the ditch
 on peaty hummocks.

The ditch bank, made
 of material dredged out
 of bottom of ditches 1-2 years
 ago, is of a gray fine
 silty sand. On it are
 surprisingly few

pioneer plants. Scattered
Panicum (? *sterile*), *Polygonum*
(*sterile*), *Ranunculus*,
Callitrichis, *Clematis*, and
Gratiola are to be found,
but the soil is almost
completely bare.

At the head of this
ditch is a good *Nyssa*
swamp, but here the
water flows away
from Lake Drummond.
While from the road on,
at least, it flows toward
the lake. The upper course
of the ditch was only
examined where the
highway south from
Buffalo crossed it.

Around the edges of
this swamp is good
tall open forest of mixed
pine and deciduous trees
with a poor undergrowth,
in places absent and
a ground cover of *Rhus*
~~toxicodendron~~ and *Woodwardia*.
The water table is about
at the surface here.

Generally along this
highway the cultivated
fields have gray sandy

a silty soils with patches of rusty brown.

Along the highways northeast of Suffolk, toward Portsmouth, are stretches of open land called locally "lights" with a ground cover of *Woodwardia* (?) and patches of *Arundinaria*, and with scattered tall bushes or clumps of *Thuya* *cedra*. The water table is at the surface here, with some standing water.

These areas are probably the result of fires burning the soil off down to the water table, so that continued standing water has impeded invasion by tree seedlings. There is some evidence of such invasion by *Acer rubrum* and *Liquidambar*, especially near the edges of these areas.

Form a cas which may very well have been similar and now well covered by maple saplings.

It would be of great interest to record some of these areas and keep track of the succession over a long period.

The whole swamp area would repay such study, especially in light of the drainage operations now going on. Water table fluctuations, the effects of fires on the surface of the soil, the vegetation which appears immediately after burning to different depths, etc. are all things that should be examined.

The impression one gets of this entire area is that the whole vegetation pattern is a result of fire. The only possibly original vegetation seen is the *Nyssa*-*Taxodium* swamp when of large trees, and there is no reason to believe that this is very old.

~~south ~~old~~ ~~old~~ ~~old~~~~~~estuary~~April 7th - Mouth of

Aquia Creek, Potomac R.

low sandy bluffs and

narrow beach. 0 m.

Loose thickets of Platane, Am.

Maple, Ulmus, Cercis, Celtis, Salix,
Ailanthus, ~~etc~~ Diospyros, etc

Thin ground cover of

grasses, Stellaria media,

Equisetum, etc. Vines in tree.

36314 *Ulmus*

2 on wet sand of level beach.

15 *Ulmus americana* L.

on beach at foot of bluff

16 *Acer saccharinum* L.

on beach at foot of bluff

17 *Celtis occidentalis*

common on beach at foot of bluff

18 *Morus rubra* L.

on beach at foot of bluffs

19 *Morus rubra* L.

on beach at foot of bluffs

20 *Ulmus rubra*

on beach at foot of bluffs

21 *Thermospermum canadense*

on beach at foot of bluffs,

in wet sand.

from 8.174-5

On steep ravine slopes
 there are ^{underable} areas where there
 is a dense ericaceous
 undergrowth 1-2 (3) m.
 high, mainly *Kalmia*

prostrate; leaves somewhat
 fleshy; flowers white to purple.
 small tree, sterile.

tree 10 m. tall, 12 cm. diam.,
 leaves white beneath.
 small bush (large tree
 nearby), sterile - to show stipules.
 small tree ♂

small tree ♀

small tree

sterile.

latifolia but some
Vaccinium stamineum and
 a little *Rhododendron nudiflorum*.
 No correlation with any
 particular exposure.

April 30 - Girl Scout Camp
Glossy Strip, Aquia Creek
Deeply dissected fine
alluvium, some of
lower beds abundantly
fossiliferous (marl)

Mature deciduous forest
on steep ravine slopes
largely *Fagus*, with
some *Liquidambar*, *Platanus*,
and a few oaks. Dark fine
soil. Understory of *Cornus*,
Azima etc.

36322 *Thelypteris hexagonoptera*
local

2 23 fern
local

2 24 *Azima*
common locally in sparse
undergrowth

1 25 *Erythronium*
common locally on
steep slope above sun
ravine bottom

3 26 *Carex*
steep ravine side, common

4 27 *Myosotis*
common on ~~steep slope~~

28 *Salvia lyrata*
very local

2 29 *Luzula*
common

2 30 *Carex*
common

flat ground above
ravine with thickets
of *Robinia pseudoacacia*.

Some slopes have little
soil but *Nyssa sylvatica*,
Fraxinus, *Acer rubrum*, *Liquidambar*, etc.
Cornus, *Carpinus* seedlings
of trees, etc. in understory,
this very sparse.

shrub 3 m. tall,
petals deep dull maroon

fruit on angled peduncle,
slightly bent down at tip;
fruit pyriform to slightly
obcordate, 3 sided & in
narrowed basal portion.

light
yellow green
erect flowers very small
white
erect ~~yellow~~ corolla lavender
calyx dark reddish green
tufted
tufted

176 1955 Virginia

36731 *Oxalis*
local
1 32 *Erigeron*
rare
2 33 *Phacelia neglecta*
common locally
2 34 *Azazium virginicum*
very common locally
1 35 *Epifagus virginianus*
common, associates with *Fagus*.
~~36~~ *Hedysotis caerulea* or *caerulea*
local, very abundant
very locally in thin
places in forest
+ 36 *Poa?*
occasional
1 37 *Panicum*
occasional
1 38 *Corydalis flavula*
locally common
4 39
common
2 40 *Polygonatum virginianum*
occasional
6 41? *Hedysotis caerulea* ♂♂
3 42? *Hedysotis caerulea* ♀♀
local, abundant very locally
in thin places in woods.

Stafford Co.

177

ered; flower yellow
sep. erid; rays lavender,
disk greenish yellow.
flowers white to very
pale lavender.
large colonies, rhizome
shallowly buried, prostrate,
frequently aromatic,
flowers cylindric, broadly
six sided, calyx lobes erid
greenish, tube dull maroon.
tufted, culms arching.
tufted
roots reddish orange.
stems weak; flowers
white, very variable in
size, fruits becoming
dull purple.
30 m.
flowers pale lavender to
almost white, eye yellowish.

178

1955 Virginia - Penn.

May 11 - 1 mi. s. of Falls Church
Sleepy Hollow

36343 *Orobanchus uniflorus*
in garden, host not
identified

Fairfax Co.

179

flowers pale purplish, with
yellow on lower side of throat,
inside.

Pennsylvania

May 14 - 6 mi. s. of Gettysburg

1 44 *Lithospermum arvense* L.
under tree along highway

flowers white.

May 14 - Wyalusing Rocks,
Susquehanna River, Bradford Co.,
~~shale~~ crumbly shale
ledges at top of cliff

1175'

1 45 *Cerastium arvense* L.
abundant on

1 46 *Saxifraga virginiana* Michx.
common on

2 47 *Amelanchier humilis* Wieg.
abundant on

2 48 *Prunus virginiana* L.
abundant on

4 49 *Aquilegia canadensis* L.
common on talus on

1 50 *Antennaria plantaginifolia*
occasional on talus on (L.) Hook

1 51 *Antennaria plantaginifolia*
occasional on talus on (L.) Hook.

loose matted tufts; flowers
white.flowers with petals white,
sepals dark red.dense colonies, individuals
about 3-6 dm. tall; calyx red.
shrub 1 m. tall; flowers
white.erect, up to 9 dm. tall; flowers
pointing downward, red with
limb of petal yellow.

flowers grayish.

flowers grayish.

180

1955 Pennsylvania
same - ~~steep~~ dry slope in second growth woods
36352 *Cypripedium calceolus*
small scattered colony in shade on

- 2 53 *Uvularia perfoliata*
common in shade on
- 1 54 *Pinus rigida*
occasional on
- 1 55 *Pinus resinosa*
common in edges of wood
(possibly planted)

May 15 - Lime Hill, west
of Wyalusing Rocks, Susquehanna R.
Bradford Co.

- 3 56 *Ulmus americana*?
roadside tree

May 15 - 2 1/2 mi. e.s.e. of Wyalox,
Bradford Co.

somewhat grazed meadow
with ~~at~~ marshy spots,
scattered *Pinus strobus* and
clumps of *Tsuga*.

~~57 *Dryopssodes variegatus*~~

- 1 57 *Veronica*
very common in open grass
- 1 58 *Polygala pauciflora*
occasional in edge of
thicket
- 3 59 *Ranunculus*
common in dense shade under
- 3 60 *Berberis thunbergii*
one bush seen under trees

Bradford Co.

181

lips chrome yellow, petals
and sepals bronze & green
- striped.
roots white; flower pendent.
pale greenish yellow.
small tree 10 m. tall.

small bushy tree,
8 m. tall; staminate
cones purple.

spreading tree 12 m. tall.

corolla white with fluish
striation on upper lobes.
corolla rose-purple to pinkish.

~~flowers~~ petals small,
yellowish.
rounded shrub 1 m. tall, flowers
pale yellow, petals falling, last
year's fruit scarlet.

182

1955 Pennsylvania

36961 *Maianthemum canadense*
common under *Tsuga*

2 62 *Crataegus*
Under pine tree

2 63 *Hedysotis caerulea* var. *caerulea*
abundant in full sun
~~in~~ moist or dry ground, absent
from muddy places and from
dense shade and thick coniferous
litter, not so abundant
in moderate shade but common.

2 64 *Hedysotis caerulea* var. *caerulea*
[same]

1 65 *Hedysotis caerulea* var. *caerulea*
[same]

36366

*Puccinia*on *Hedysotis caerulea*

Bradford Co.

183

rhizomes buried, budding
- stems erect.
- shrub 3 m. tall; petals and
filaments white, anthers purple.
brevistylous flowers

[see below]

longistylous flowers
[see below]

same as #36363 + 36364 but with
some flowers 5 or 6 merous.

flowers with limb light
blue-mauve, varying to very
pale or, rarely, to almost violet,
basal $\frac{1}{4}$ to $\frac{1}{3}$ of lobes in some
clumps white or almost so,
center yellow; limb varying
considerably in width, lobes
also varying in width.

Longistylous and brevistylous
flowers about equal in number,
never in same clumps. Other
variations also by clumps,
suggesting that the clumps are close.

May 15 - ~~Chenango~~ River Valley
from cliff on Waverly Hill
looking south

River meandering in
a flood plain ½ to 1 ½ mi wide
which ~~flows~~ lies in
entrenched meanders
some hundred feet deep.
Flood plain mostly
in cultivated fields
with a few patches of wood,
trees along roads and
along river and ravines
near river. Hills opposite
mostly wooded with
broad leafed wood, a few
scattered small groups
or patches of conifers. Some
upland clearings. The
wood very uniform,
foliage light bronze
green at this season,
except where former
clearings show as
angular patches of a
different green.

Some fields bright
green or with patches
of yellow (*Barbarae*), some
plowed and gray brown.

May 18 - just north
of Maplewood, west
shore of Lake Cayuga

Here for a very short
stretch a bedded limestone
forms cliffs plunging
directly into the water
of the lake. The beds are
approximately horizontal
and of varying thickness
up to at least 2 or 3 dm.

The lake level, acc. John
Wells, has been controlled
for the last hundred
years, fluctuating about
4 ft. annually, high
in summer, low in
winter. It was probably
somewhat lower before
control was instituted.
The control was to provide
water for the Erie Canal.

The lake does not ordinarily
freeze over in winter, but
usually has some ice
along the margin.

At the contact of water
and limestone cliffs are
a series of conspicuous
nips, ^{1 to 2 dm.} ~~a few inches~~ high
and as much as 2 dm.
deep, but usually much
less than that. These all

occur within the reasonable range of fluctuation of the water, and could conceivably represent still-stands, especially as the surface of the water was in one of these when observed and the amplitude of ripples and wavelets was such as to just fill the nips and keep it wet. However, the nips also correspond exactly with beds in the limestone, which may be soft ones,

and could be very well accounted for by differential solution. The same nip is by no means the same depth all along, in some spots being even absent. At certain places in this short length of cliff the whole cliff seems to be somewhat undercut about the amplitude of the range in lake level variation, in other places not at all.

May 21 - Turkey Hill Rd.
e. of Ithaca

Old field scrub on low flattish, ^{semi} marshy ground mainly of *Cornus* sp. (goemina?) and an erect *Rubus* (*idaeus*?), with some *Pyrus* (*Malus*), *Viburnum*, etc.

Where really marshy
Salix sp. dominant.

May 21 Cascadilla Cr.
mid e. of

36367 *Erythronium americanum*
abundant in and around edges of roadside thickets.
forming dense sod locally

desiccated hard & dry (May 21)
(more colony #2?)

spots on leaves scarcely visible; peduncles arching to erect, fruit more slightly upturned, pyriform

188

1955 New York

36368 *Erythronium americanum*
 dense colony ^{over} a few
 square yards in edge
 of roadside thicket.
 (Moore's colony #3)

69 *Erythronium americanum*
 dense colony in and around
 edges of roadside Crataegus
 thicket. (Moore's colony #4)

70 *Erythronium americanum*
 dense colony in edge
 of roadside thicket
 (Moore's colony #5)

189

spots on leaves scarcely
 visible; apparently
 colony did not set fruit,
 few rudiments on
 arching or erect peduncles,
~~delicate~~ nodding. pyriform.

spots on leaves scarcely
 visible; very few fruits
 set, these ^{straight} on arching
 peduncles. pyriform to very
 shortly oblong with narrowed
 bases. a few rudiments
 seen of flowers that did
 not set fruits. peduncles
 erect, brooked at apex.

spots on leaves scarcely
 visible, no fruits or
 even peduncles of aborted
 fruits ~~seen~~ found; bulbs
 of young plants, only
 several cm. below surface,
 send out thick soft white
 stems, 1 to several, from
 base, these reaching 10 or
 more dm. in length,
 running a crooked
 course under the surface
 of the ground or rarely,
 arching above surface
 and reentering ground,
 tips usually attempting
 to grow downward [cut off dryed
 and hardness of roots?]

1955 - New York

May 21 - Monroe
Cascadilla Creek, 35 m.s. W.
Pasture with scattered
groups of trees, old mill
pond

36370 *Acer nigrum* var. *glauco*

71 *Acer nigrum* var. *nigrum*?

May 21 - Fall Creek

72 *Erythronium americanum*
abundant locally in
small patch of second-growth
woods on low ground along creek
(Moore's colony no. 6.)

73 *Erythronium americanum*
abundant on steep
wooded slope (elm, ash,
maple woods)
(Moore's colony no. 7)

Acer nigrum here - no two
trees exactly alike,
no two exactly same stage
in expansion of leaves -
from about $\frac{1}{4}$ to fully out.

tree 3-4 dm. thick, 15 m. tall,
dark gray bark, leaves
scarcely reticulate
beneath.

tree 2.5 dm. thick, 15 m. tall
dark gray bark, leaves
reticulate beneath,
not fully expanded.

spots on leaves scarcely
visible; fruit scarce,
pyriform to very shortly
oblong with narrowed
base, ^{pendent} on arching peduncle
straight to slightly offset;
no abortive fruits seen.

spots on leaves very faint;
fruits common locally,
pyriform to very broadly
oblong to almost globose,
on arching to almost erect
peduncles, peduncles when
erect curved downward
at apex, when arched either
straight or curved upward;
abortive fruits occasional on
erect peduncles, hooked at tips.

192

1955 New York

36374 *Cypripedium americanum*
abundant in dense
woods on flat hilltop,
and down slightly over
edge onto steep slope.

75 *Maianthemum canadense*
occasional in dense
wood on flat hilltop

193

spots on leaves scarcely
visible; fruit very
rare, only one seen,
pyriform on arching
peduncle; aborted fruit
rare also, on arching peduncle;
erect from prostrate
shallowly buried
rhizome; flowers white.

194

1955 Pennsylvania

May 24 Snake Creek, 5 mi.
north of Montrose.

36374 *Veronica*
forming patches in
second growth forest
on level terrace well
above creek

huguenin co.

195

erect from slender
~~cree~~ buried rhizomes,
flowers bright blue.

196

197

